

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-05-28			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY America Vibracore, Inc.			11. MANUFACTURER'S DESIGNATION OF DRILL Pneumatic	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-01-05 13:50	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -44.2 Ft.	
			17. TOTAL RECOVERY FOR BORING 20 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-44.2	0.0					Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.
			SAND, fine to medium grained, quartz, trace shell fragments, trace shell hash, trace silt, 1.0" shell fragments @ 4.2', 6.0', 7.2', 7.5' and 9.0', 1.0" x 1.0" rock fragment @ 7.3, 1.0" to 2.0" x 3.0" shell fragments from 10.5'- 11.5', 1.0"- 2.0" shell fragments @ 12.0', gray (5Y-5/1), (SP).			
-54.7	10.5					
-55.7	11.5		SAND, some shell fragments, trace shell hash, trace silt, shell fragments range from 1.0" to 3.0", gray (5Y-5/1), (SP).			
-56.3	12.1		SAND, trace shell fragments, trace shell hash, trace silt, 2.0" shell fragment @ 12.0', gray (5Y-5/1), (SP).			
			CLAY, black (5Y-2.5/1), (CL).			
-64.2	20.0					
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL.GPJ JPBRAZIL.GDT 5/27/09

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-05-29			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY America Vibracore, Inc.			11. MANUFACTURER'S DESIGNATION OF DRILL Pneumatic	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-01-05 14:25	
8. TOTAL DEPTH OF BORING 16.0 Ft.			16. ELEVATION TOP OF BORING -43.3 Ft.	
			17. TOTAL RECOVERY FOR BORING 13.8 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-43.3	0.0					Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.
-44.3	1.0		Gravely SAND, quartz, little shell fragments, little shell hash, trace silt, 1.0" x 1.0" rock fragment @ 0.8', gray (5Y-5/1), (GW).			
-47.1	3.8		SAND, fine grained, quartz, little silt, trace shell hash, 0.5" x 0.5" rock fragment @ 2.4', gray (5Y-5/1), (SP-SM).			
-57.1	13.8		GRAVEL, carbonate, trace sand, trace silt, gravel up to 1.0", light gray (5Y-7/1), (GW).			
-59.3	16.0		No recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL.GPJ JPBRZIL.GDT 5/27/09

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTVC-05-30			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY America Vibracore, Inc.			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER Pneumatic <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING STARTED COMPLETED 07-01-05 14:55 07-01-05 15:00	
8. TOTAL DEPTH OF BORING 12.5 Ft.			16. ELEVATION TOP OF BORING -42.0 Ft.	
			17. TOTAL RECOVERY FOR BORING 12.5 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-42.0	0.0					Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm.
-47.0	5.0		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-6/1), (SP).			
-48.2	6.2		Gravelly SAND, fine grained, quartz, trace shell hash, trace silt, (2) 1.0" shells @ 5.1', up to 2.0" rock fragments @ 5.1', 5.5', 5.6', 5.7', 6.0' and 6.2', dark gray (5Y-4/1), (GW).			
-49.2	7.2		SAND, fine grained, quartz, little silt, trace shell hash, dark gray (5Y-4/1), (SP-SM).			
-54.5	12.5		GRAVEL, carbonate, trace shell hash, trace silt, gravel up to 3.0", gray (5Y-6/1), (GW).			
			End of Boring			

APPENDIX 22

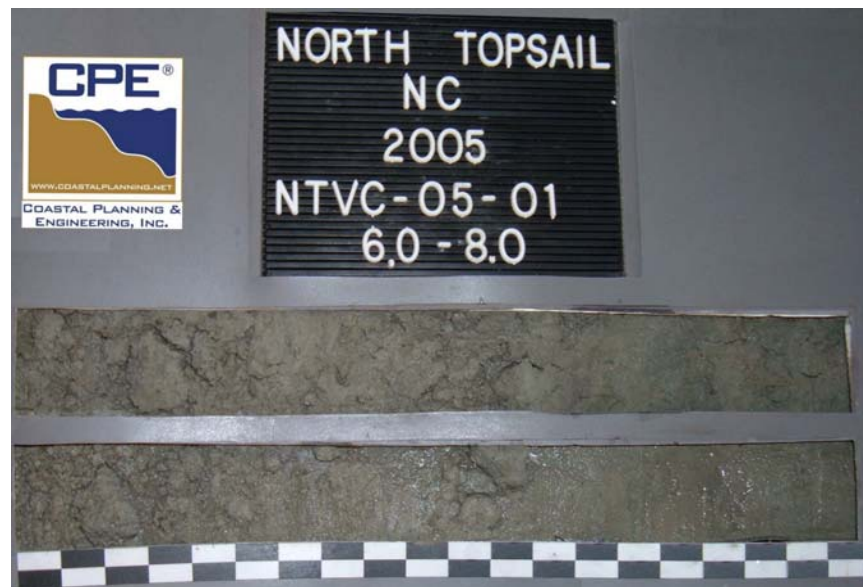
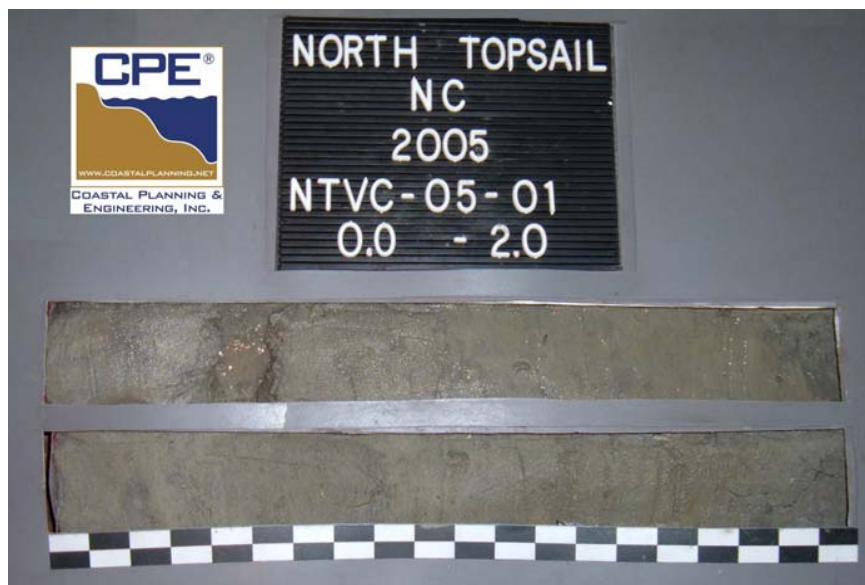
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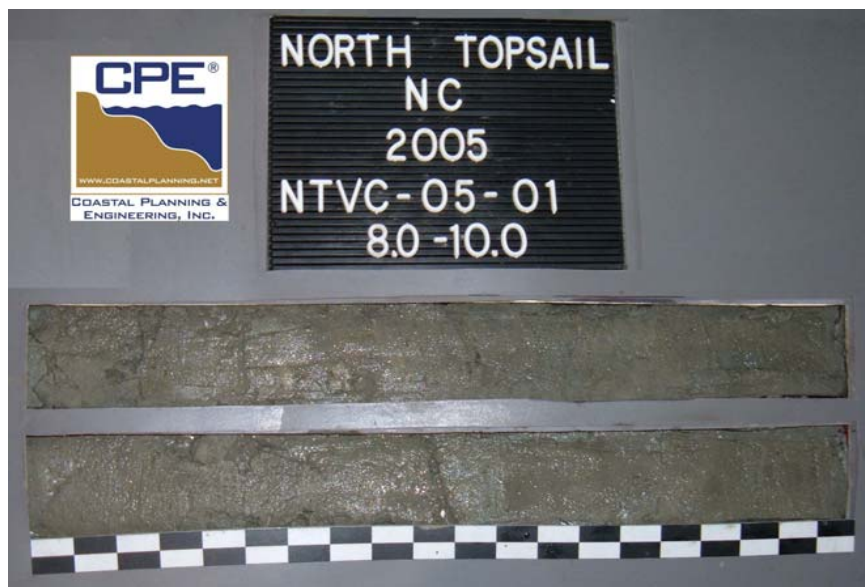
APPENDIX 23

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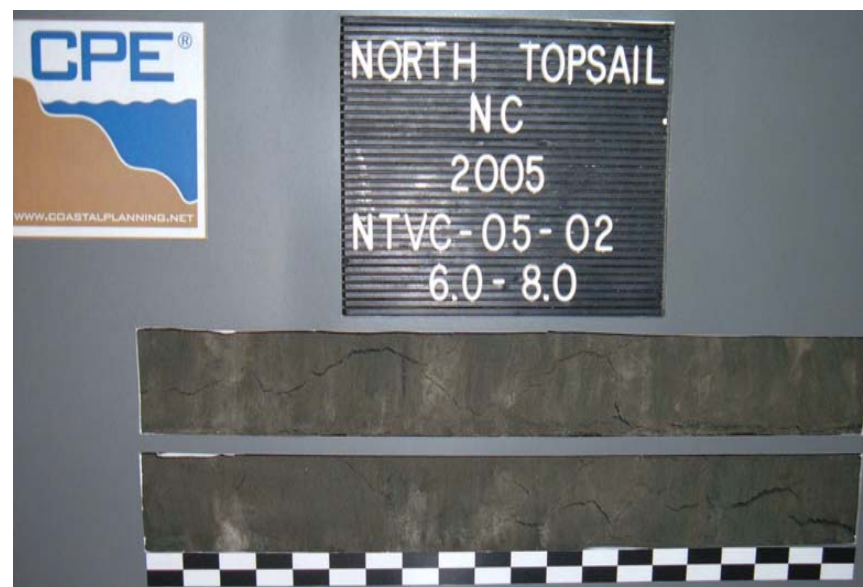
APPENDIX 24

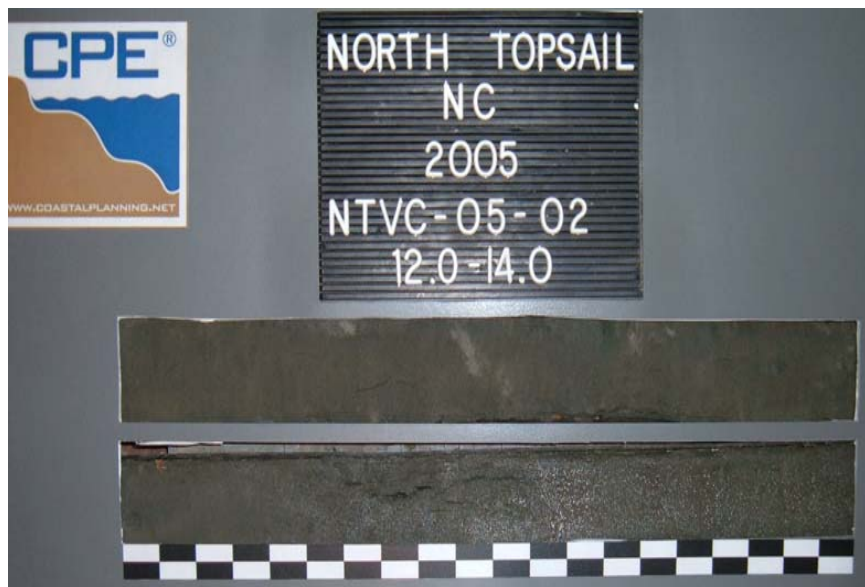
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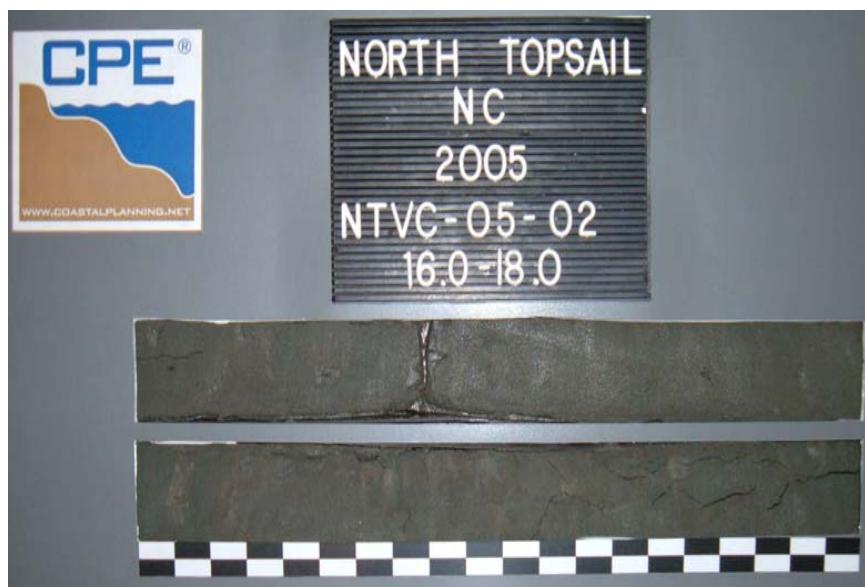


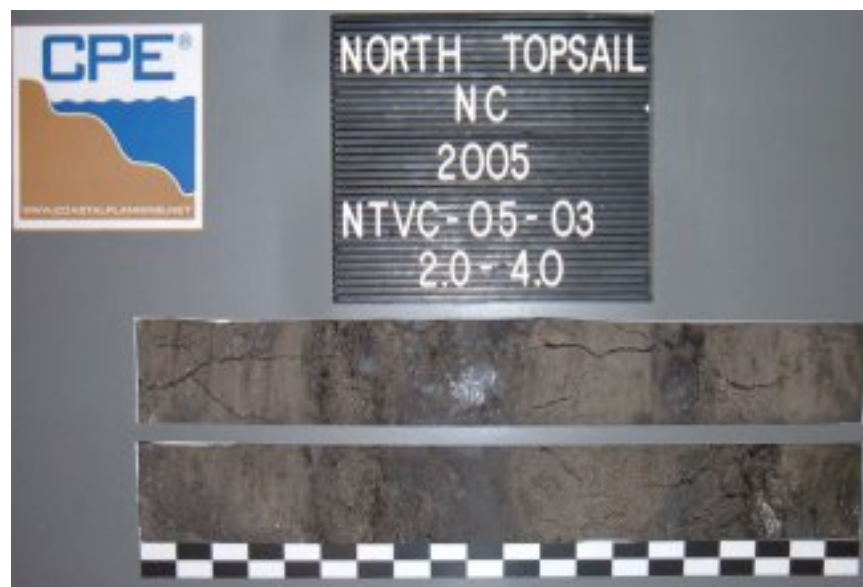








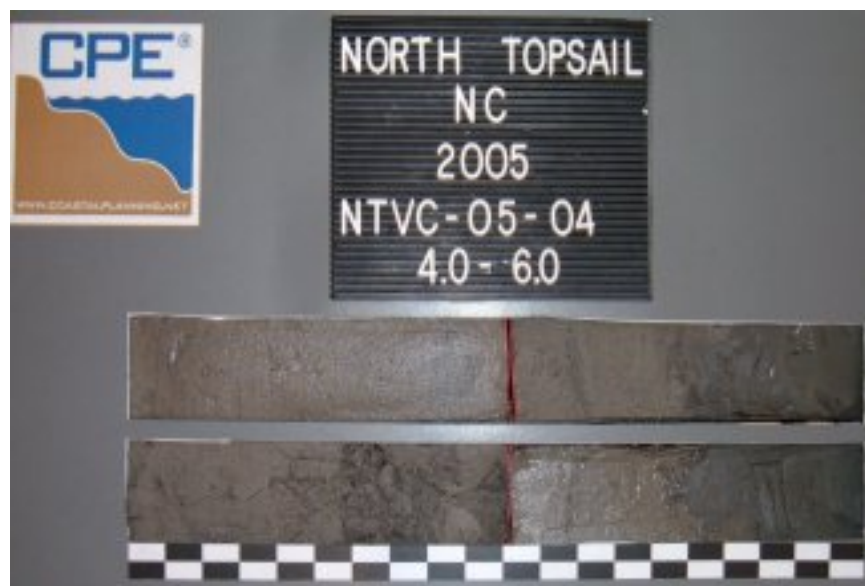
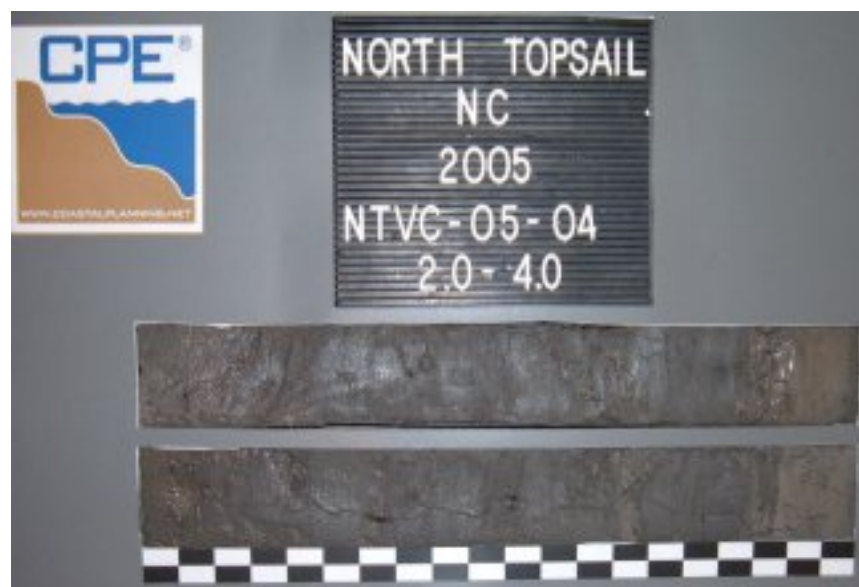


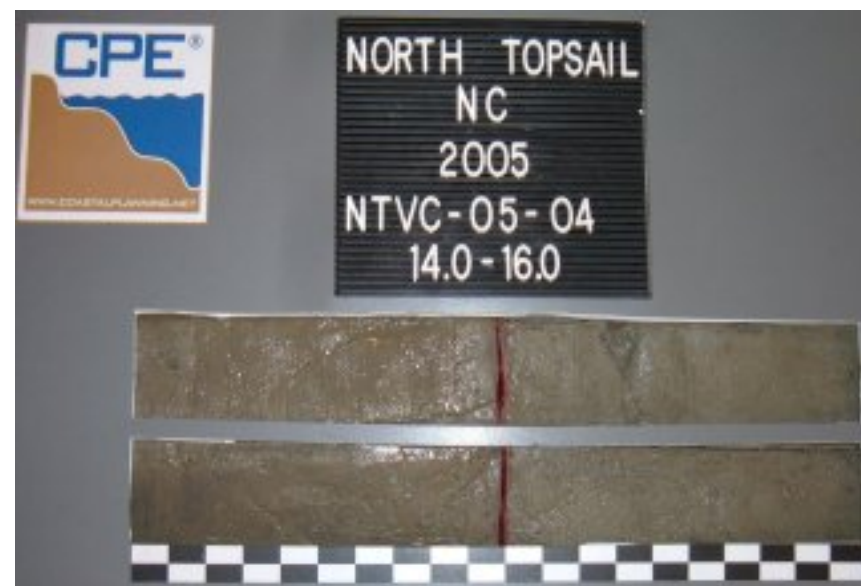
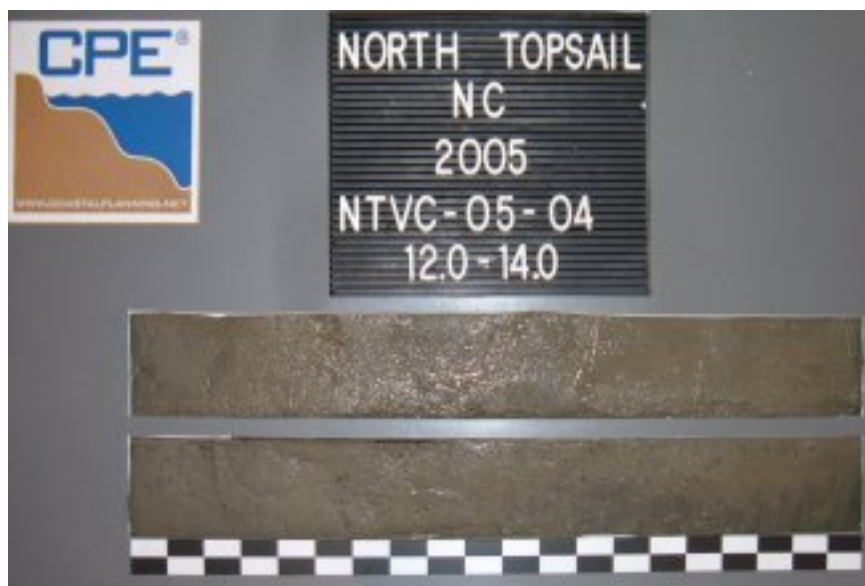
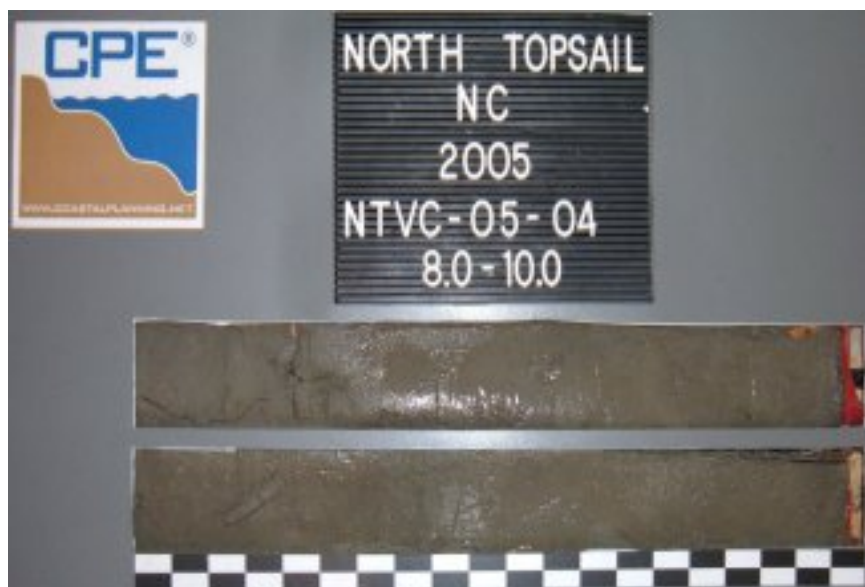




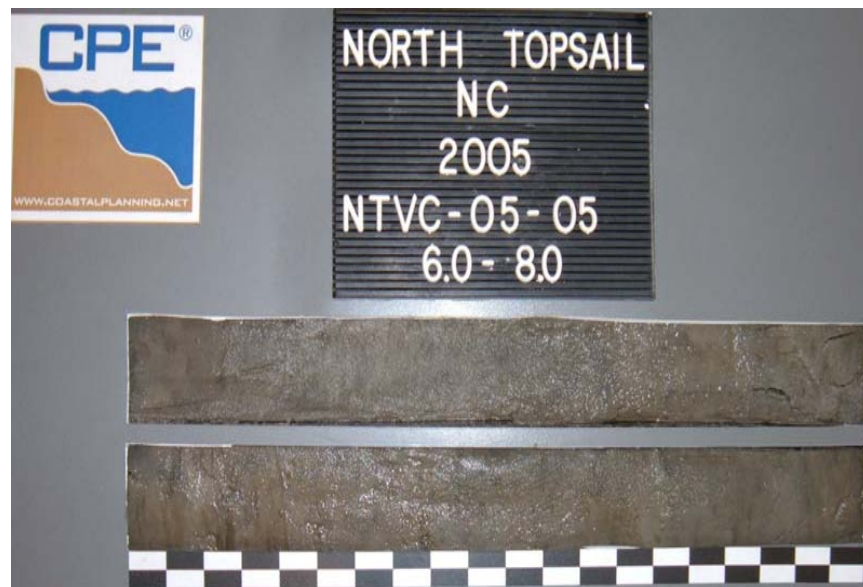
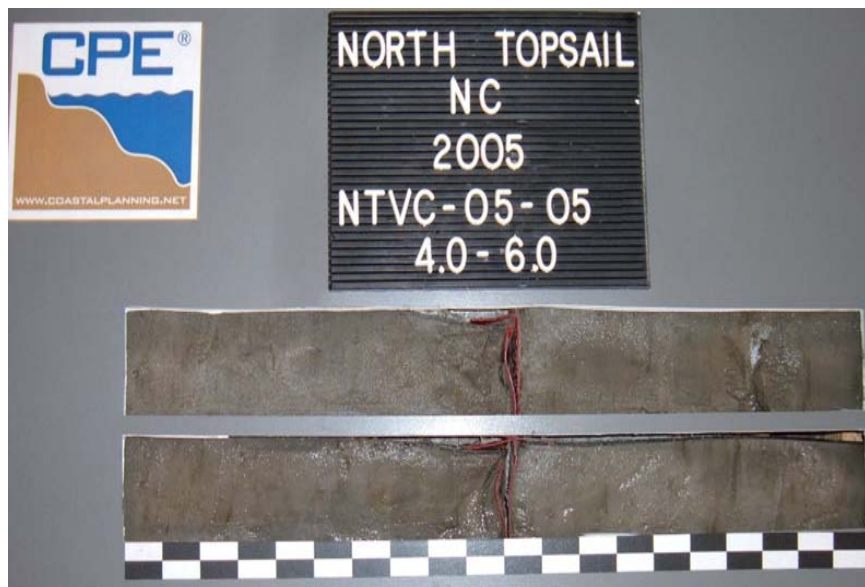
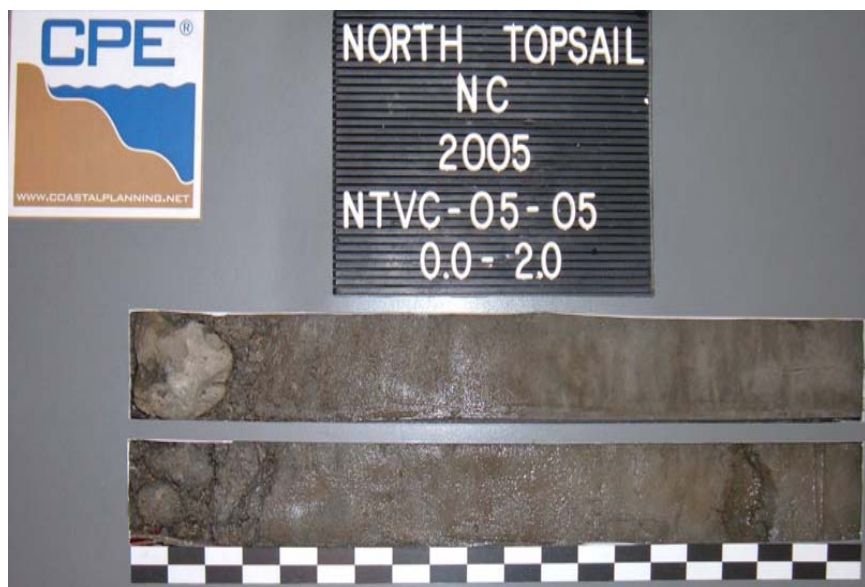
NORTH TOPSAIL
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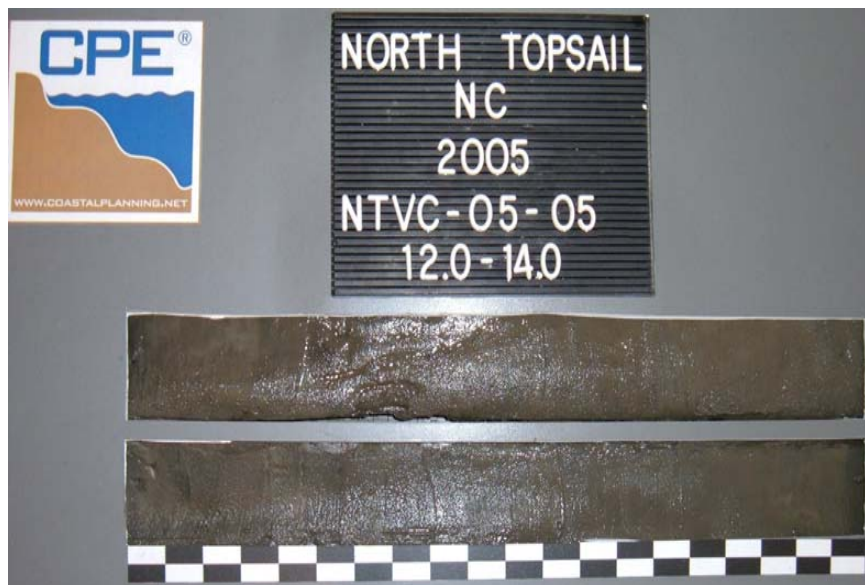
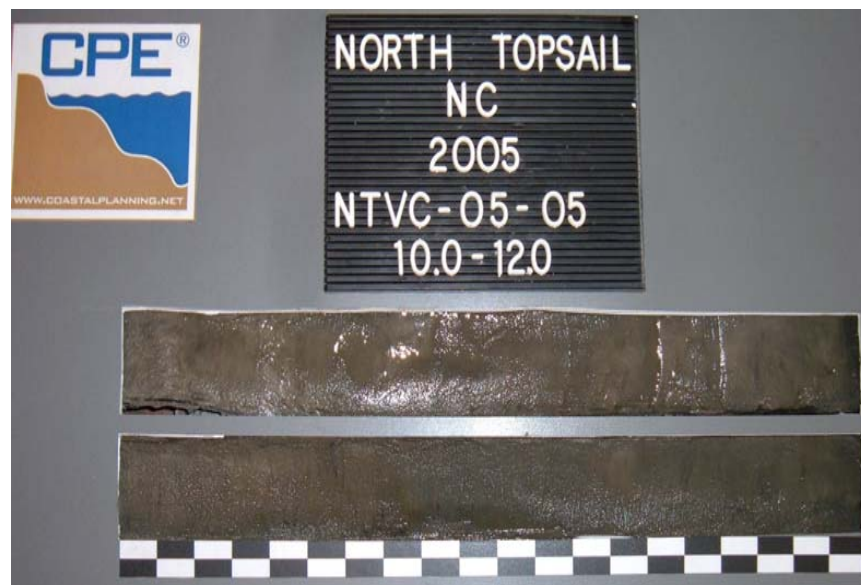
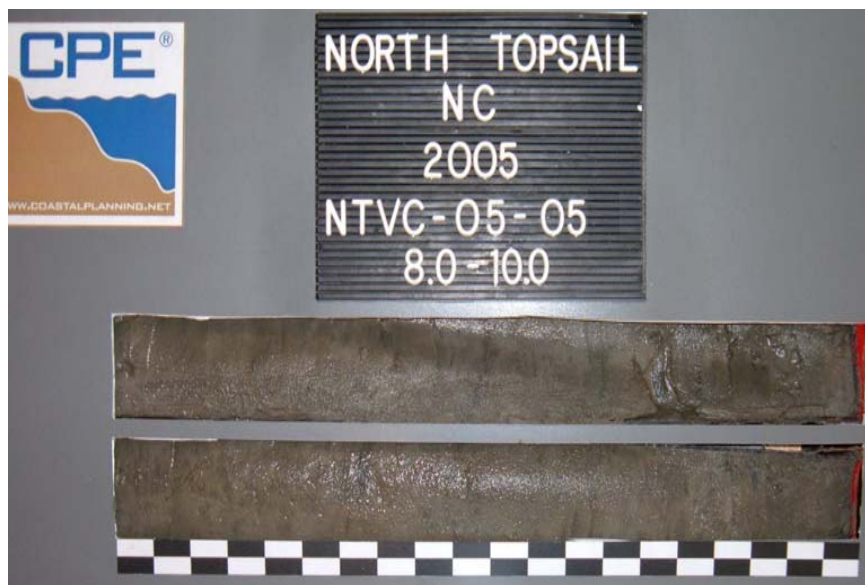


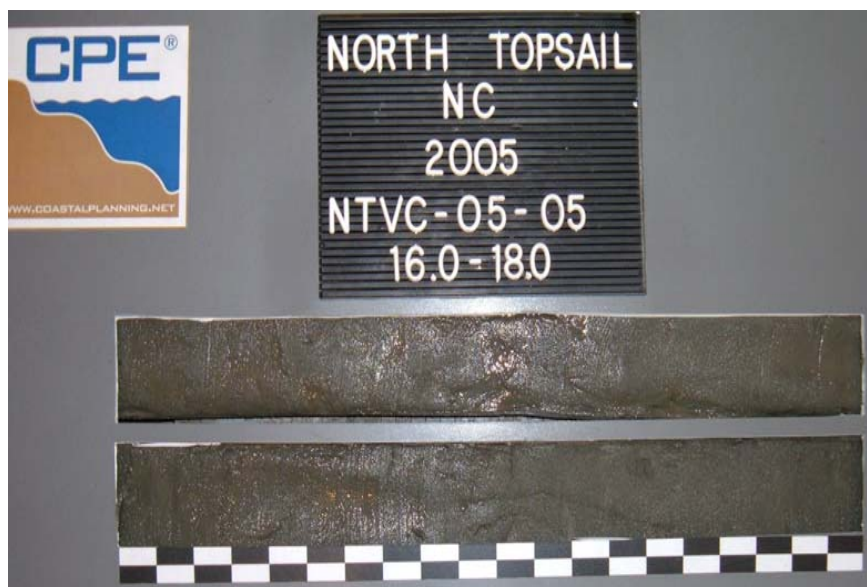


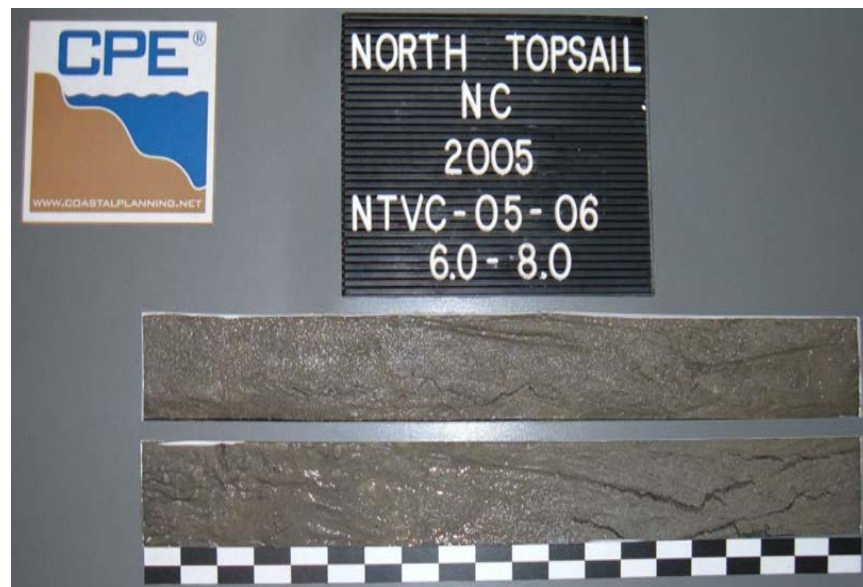
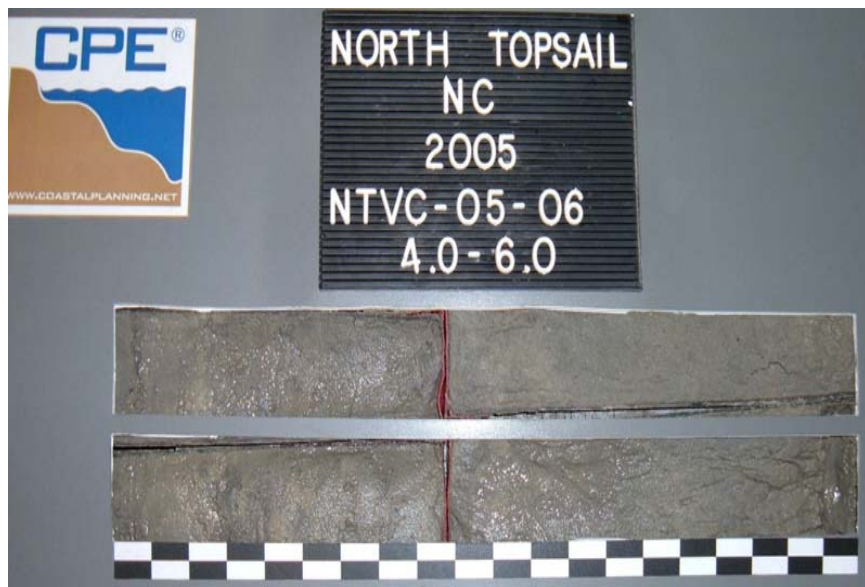
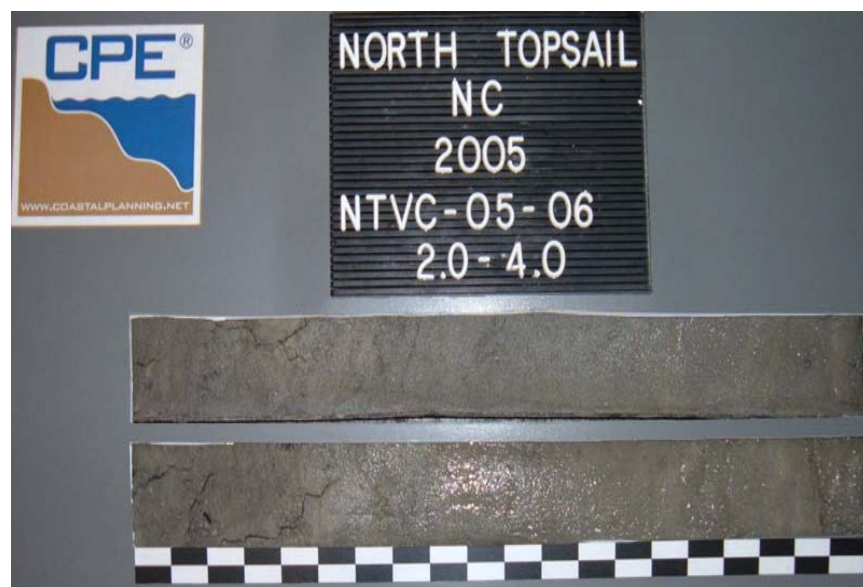
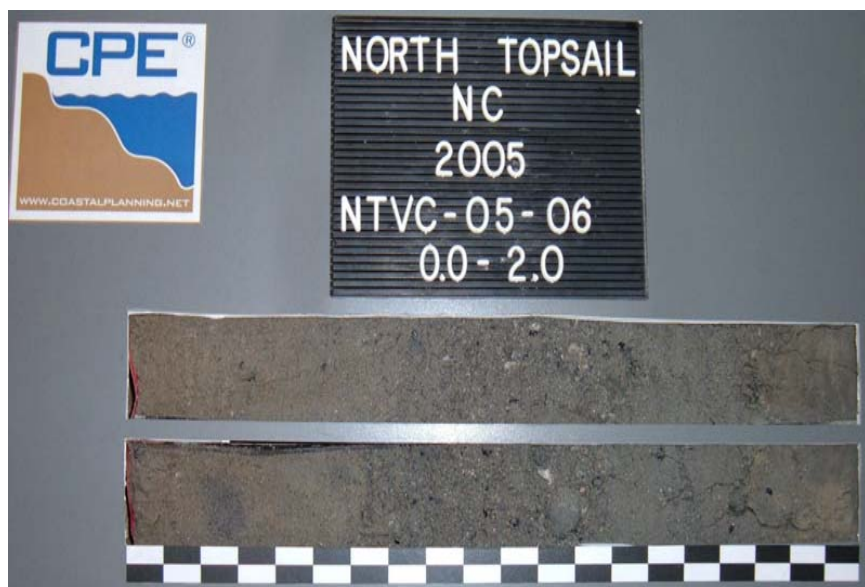


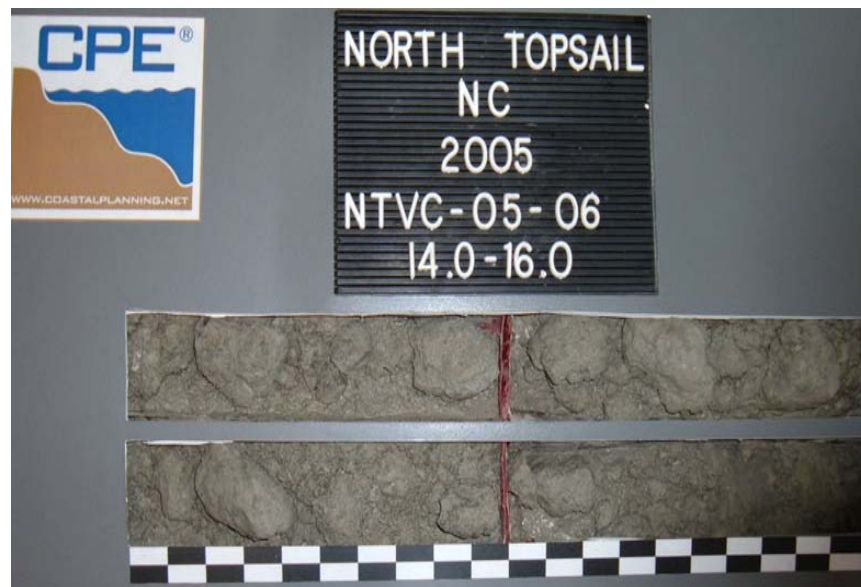
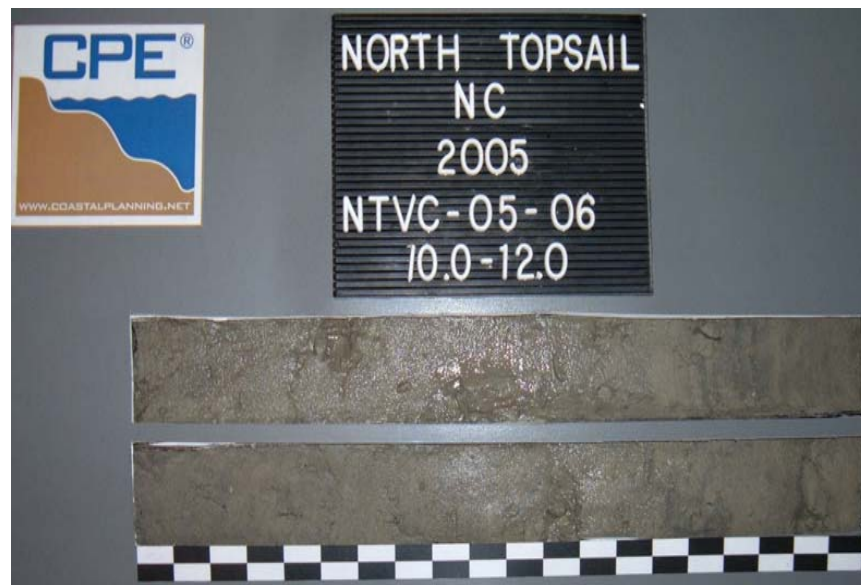
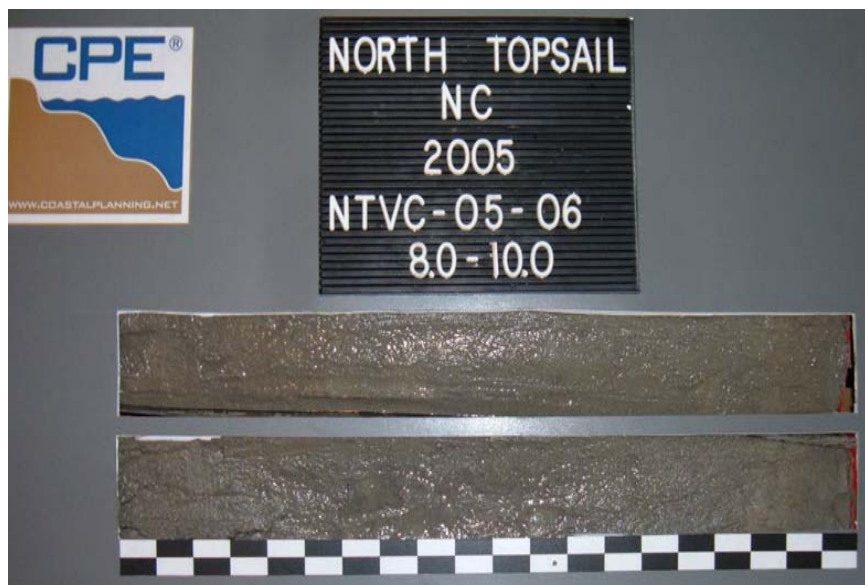


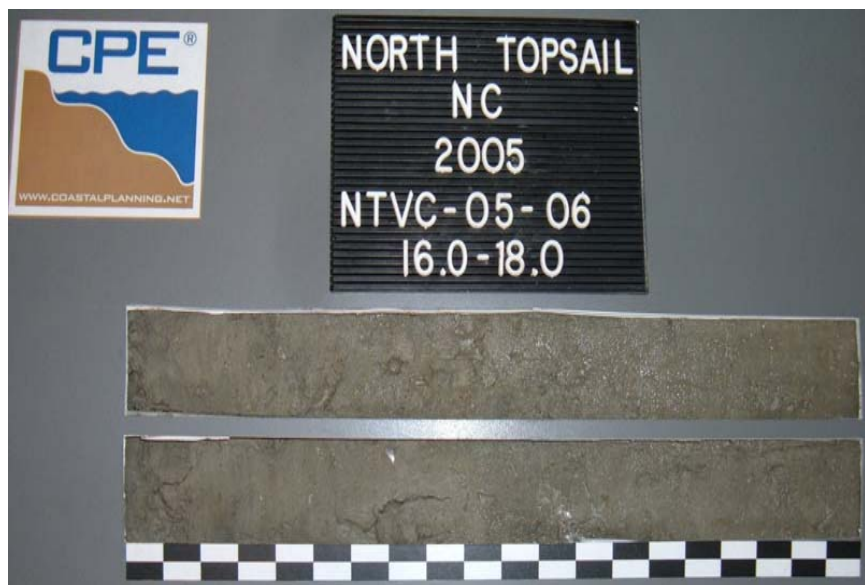


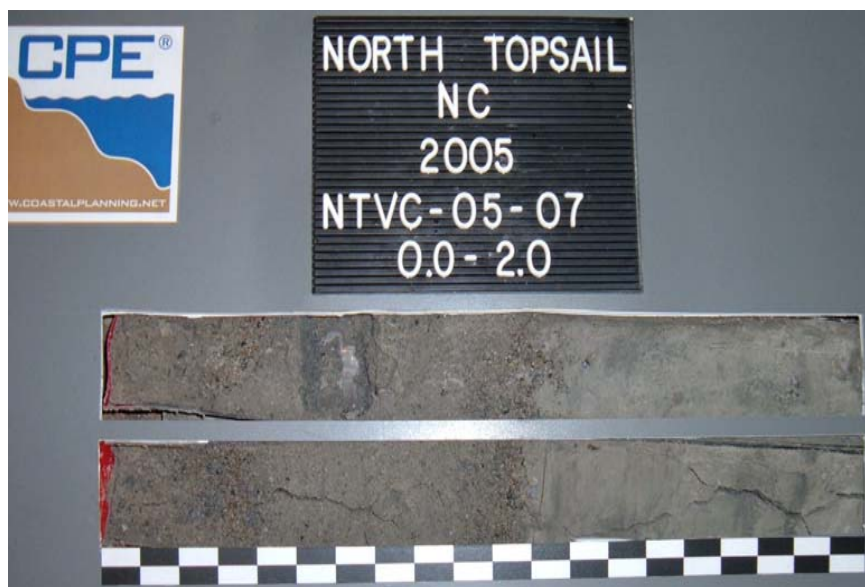


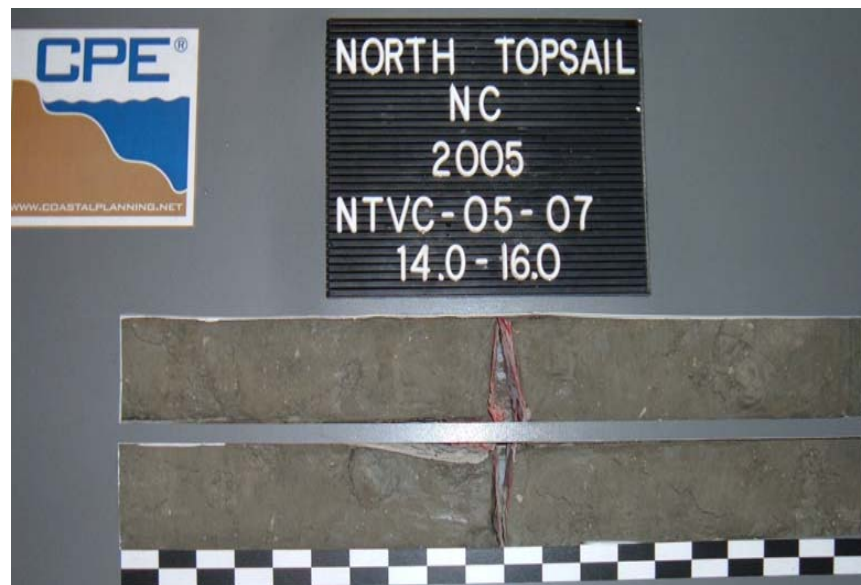
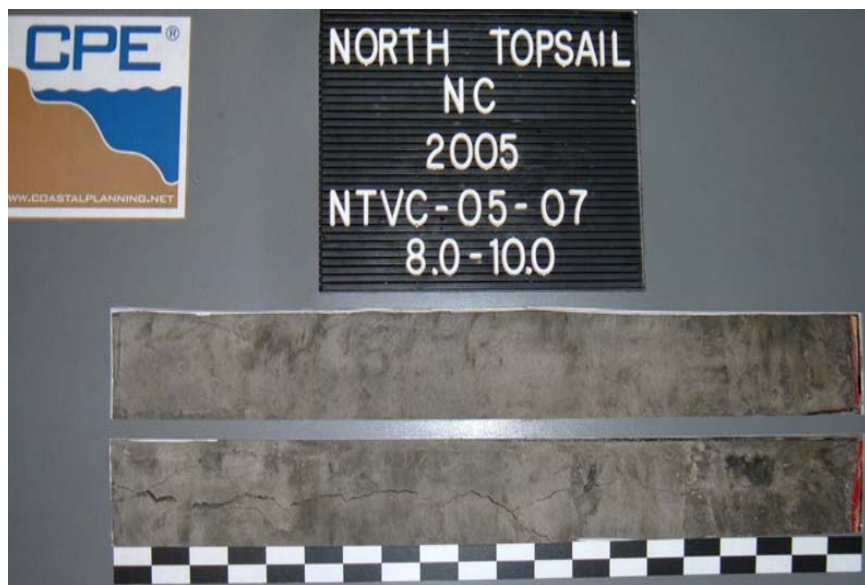


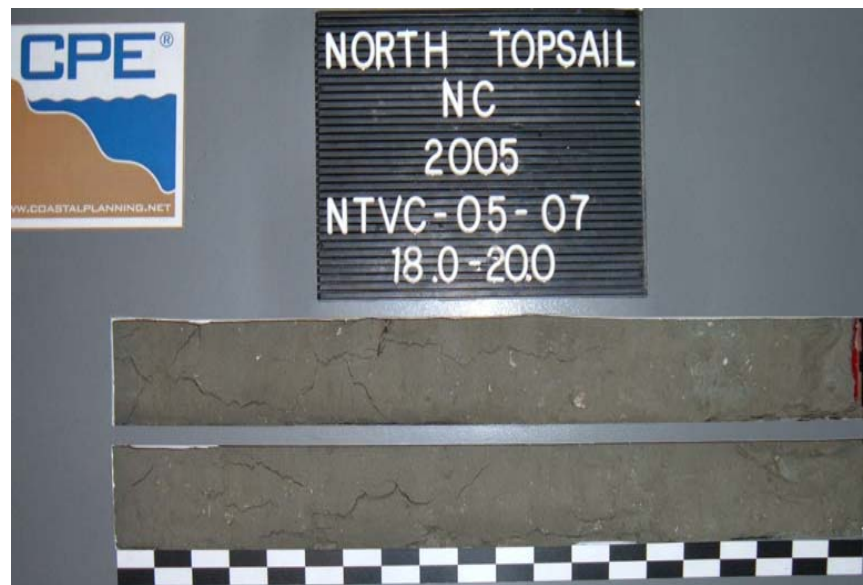
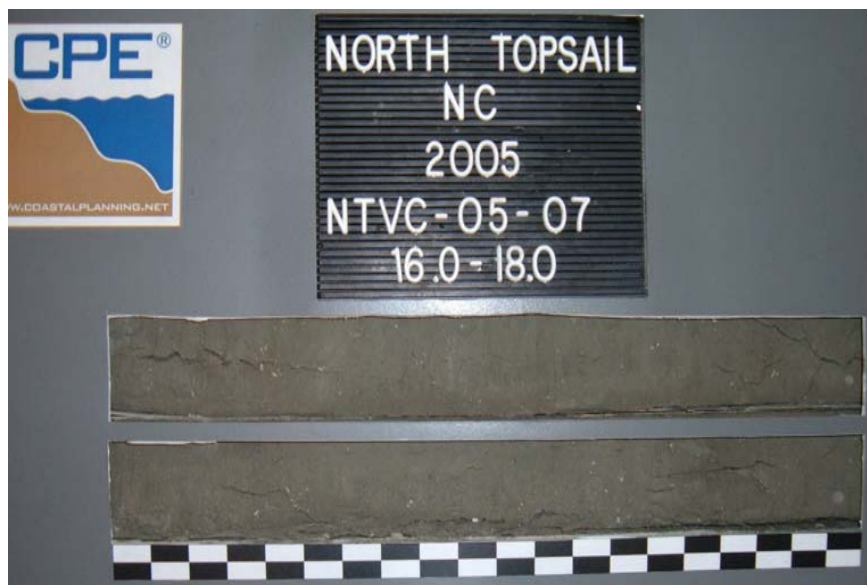


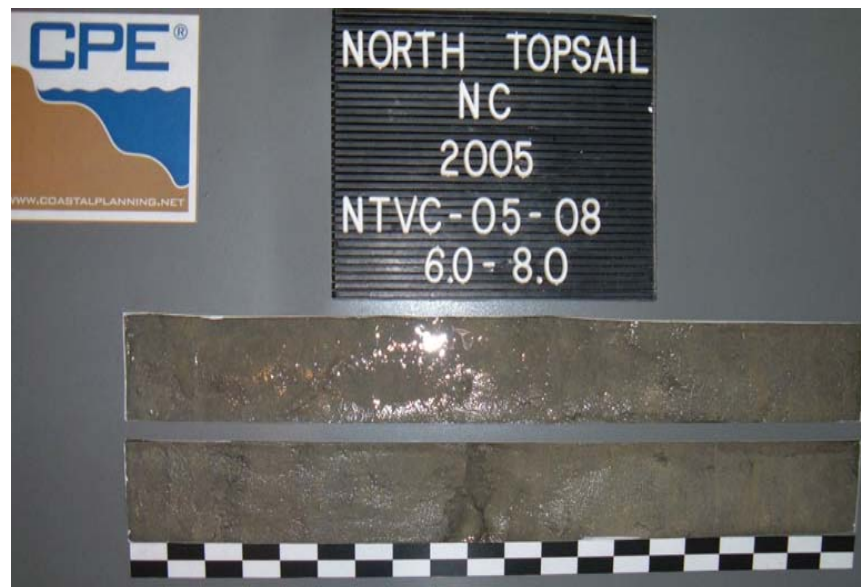
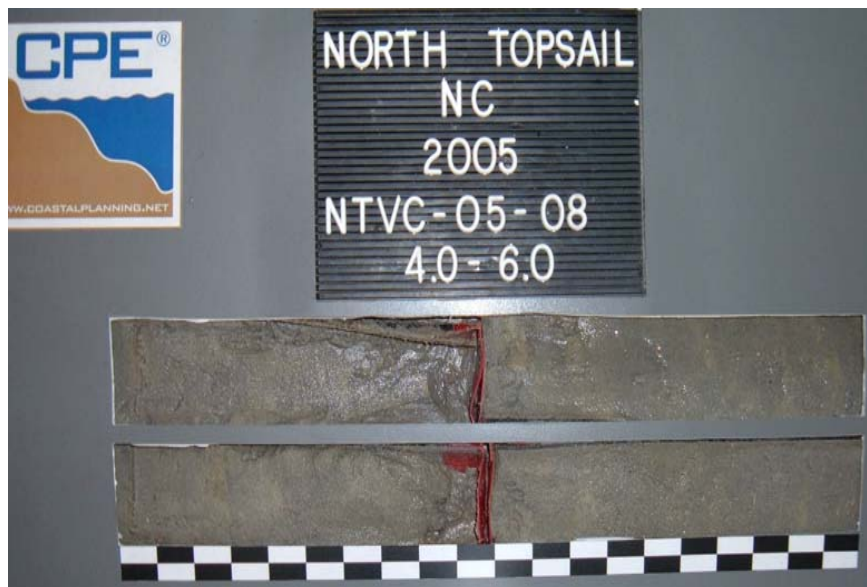
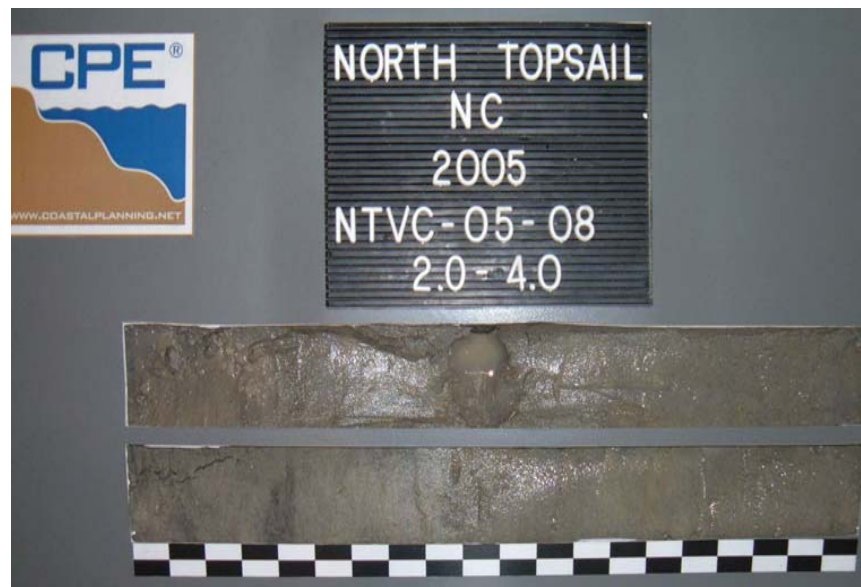


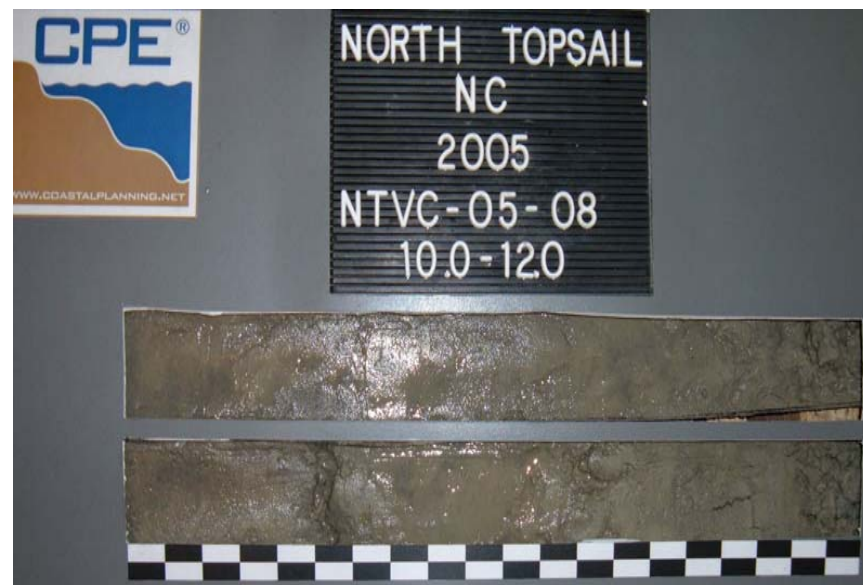


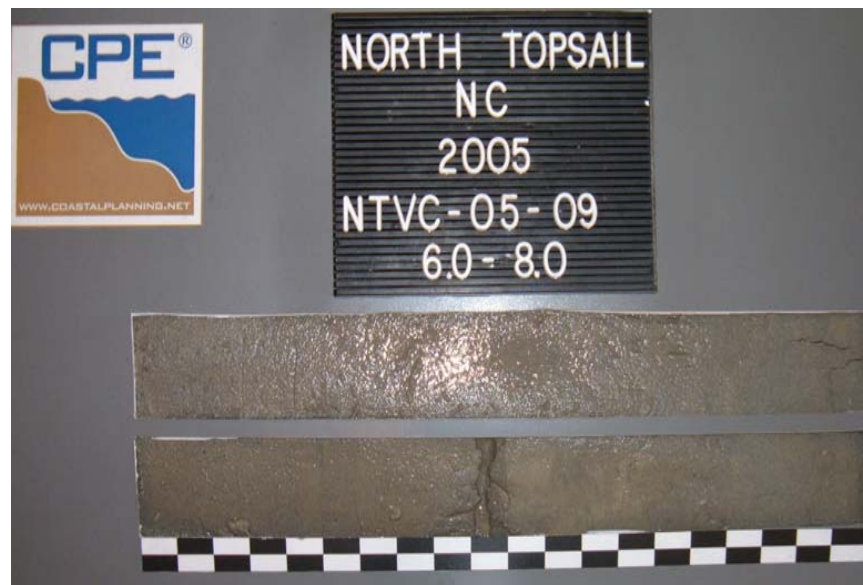
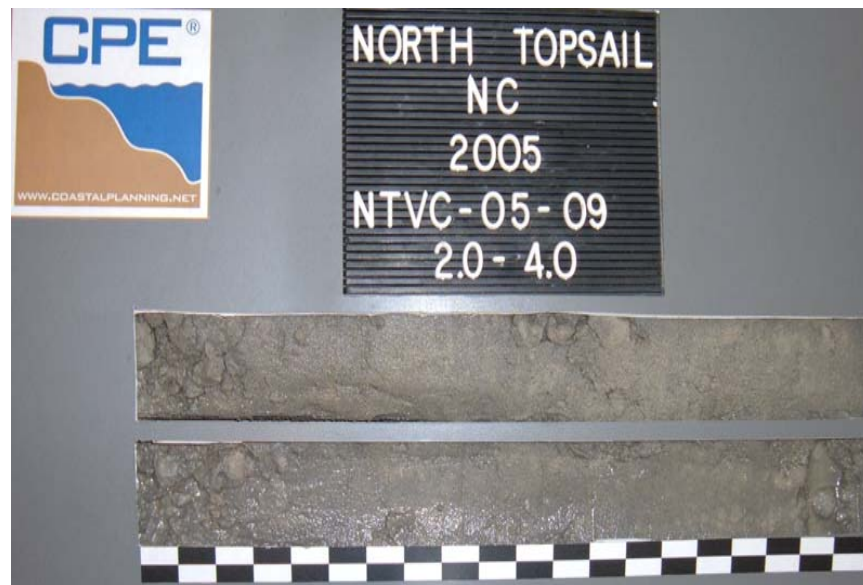
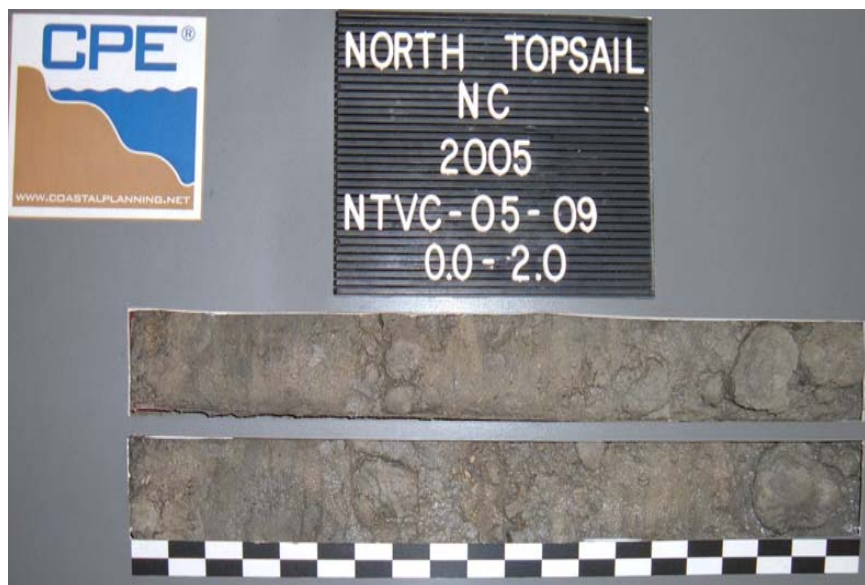


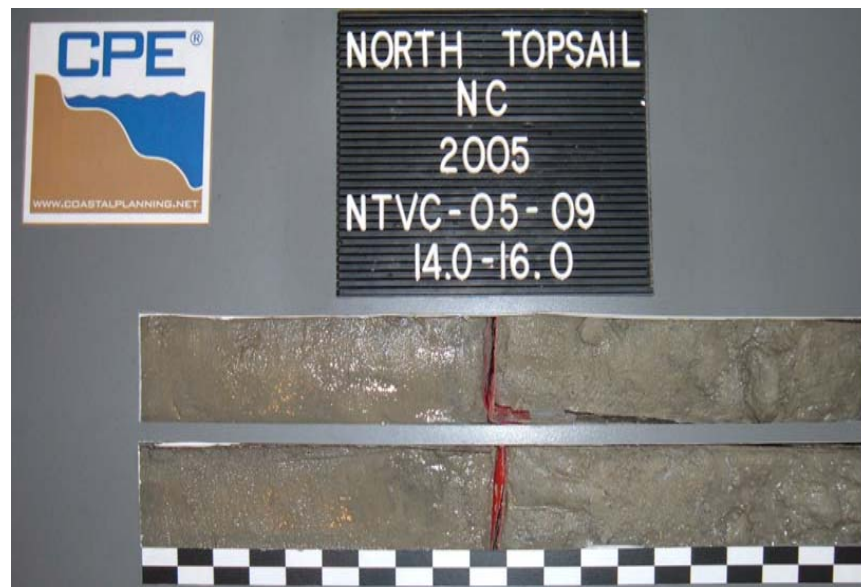
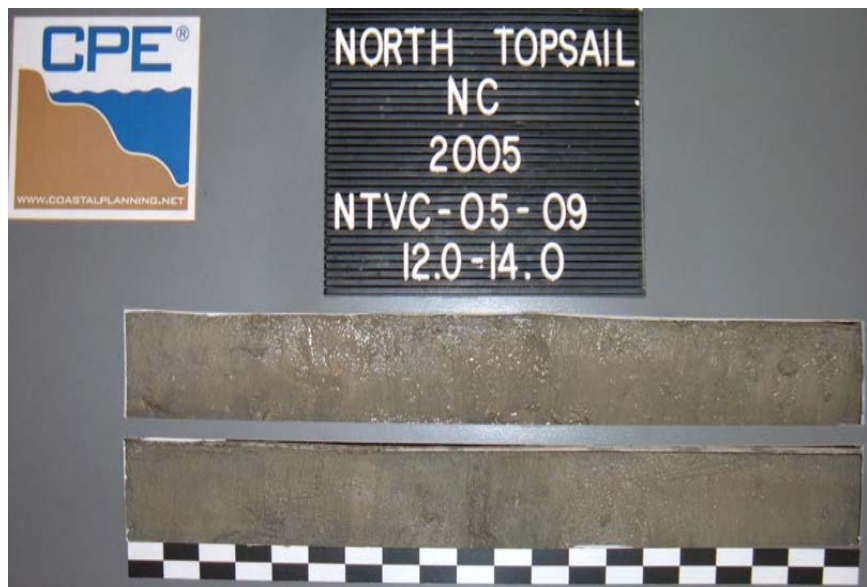
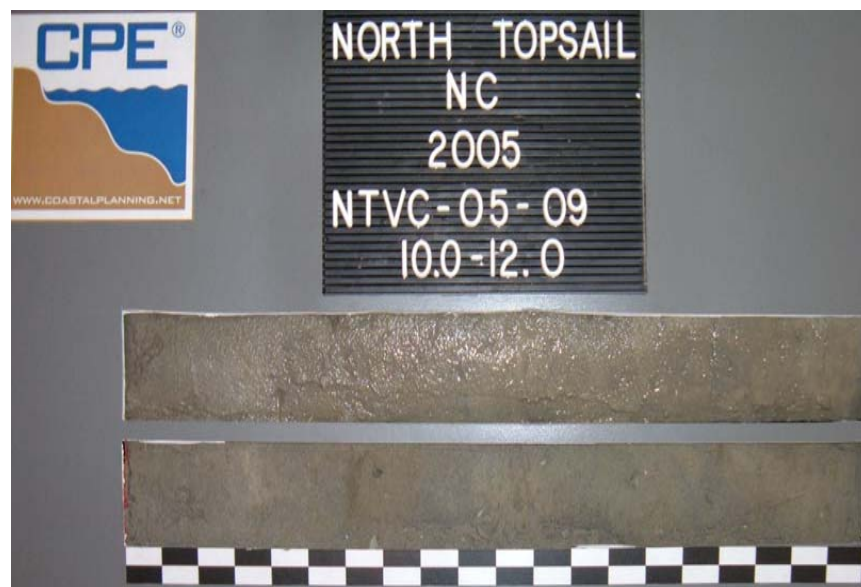
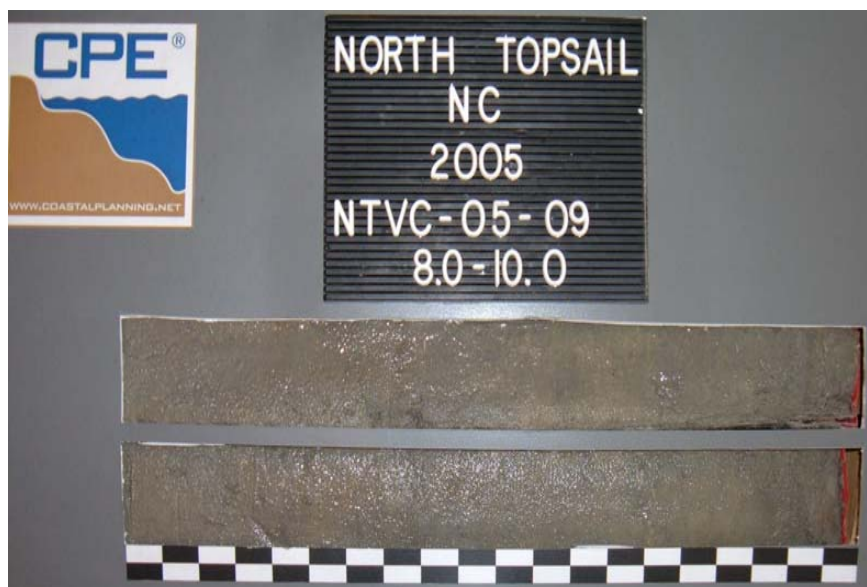


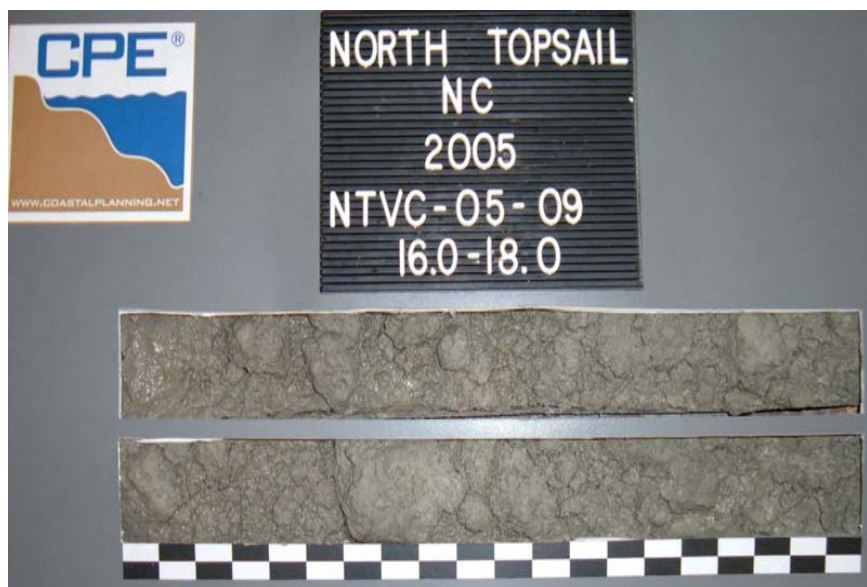


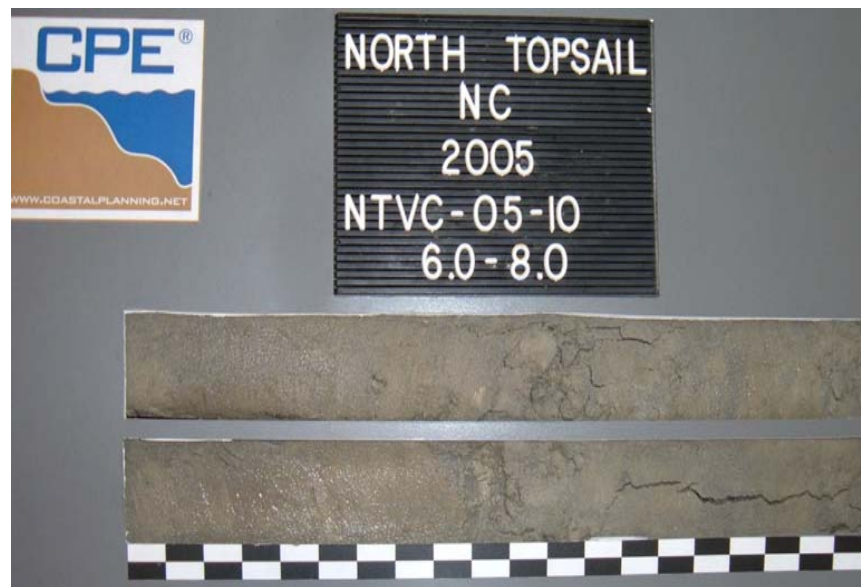
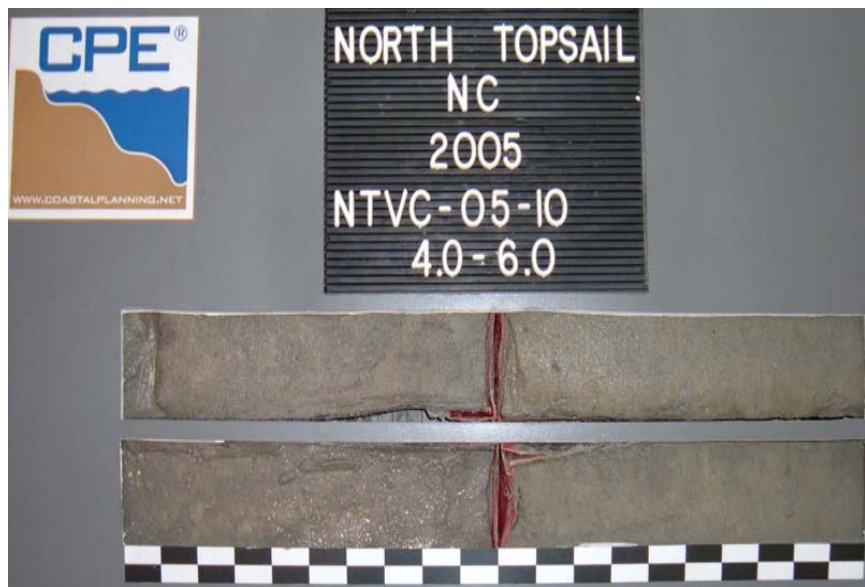
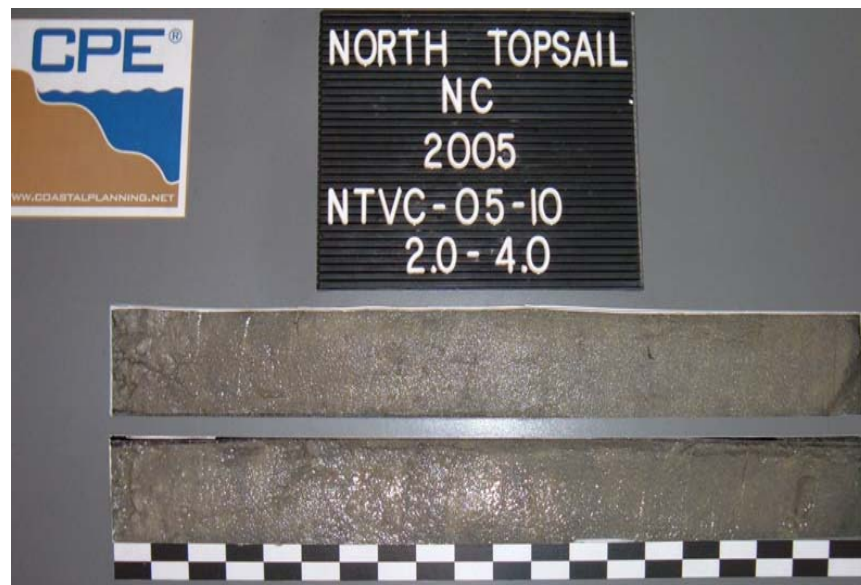
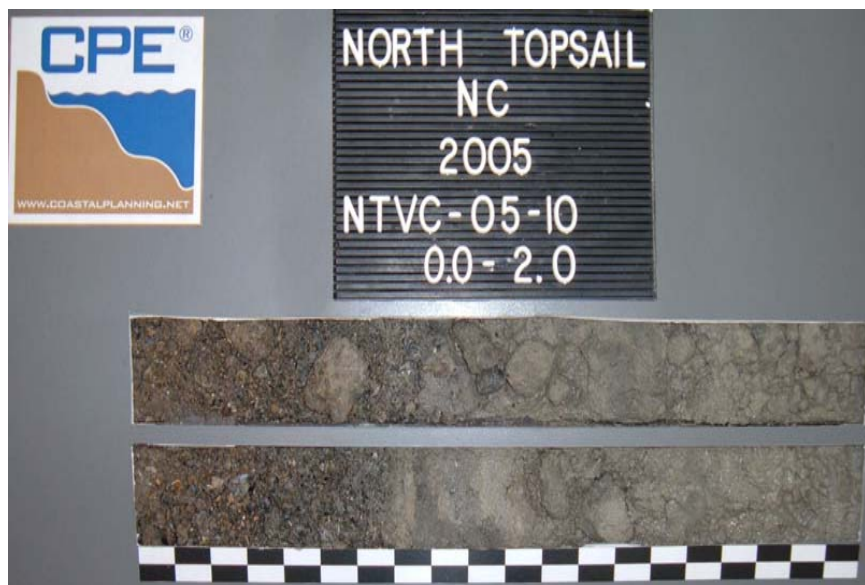


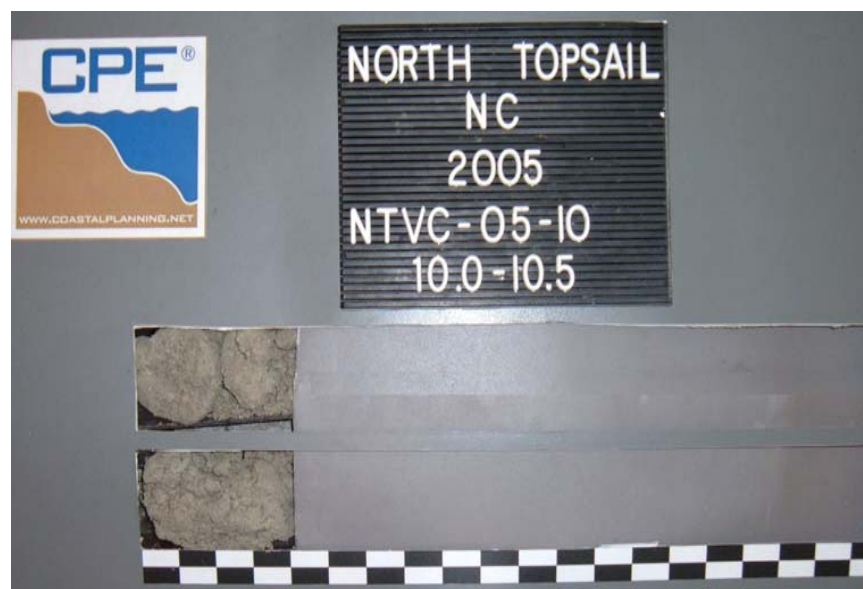
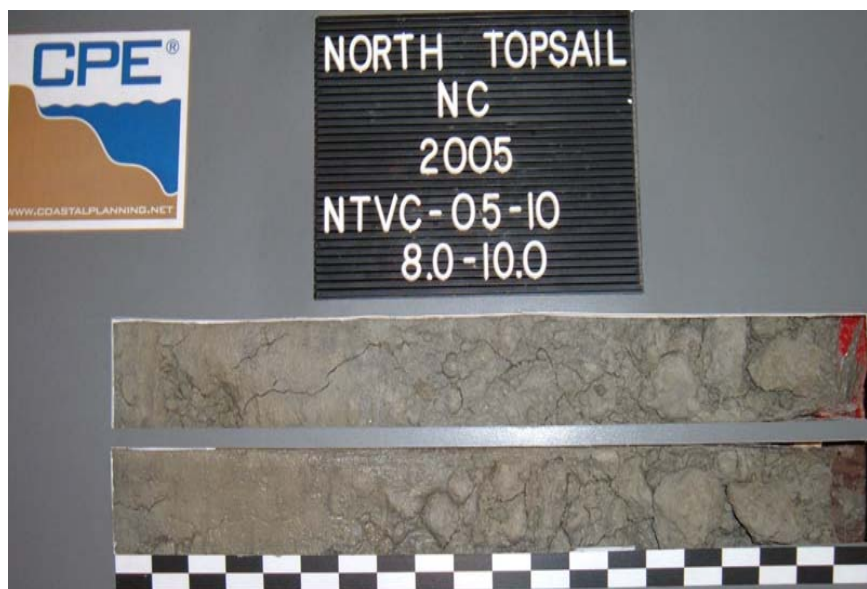




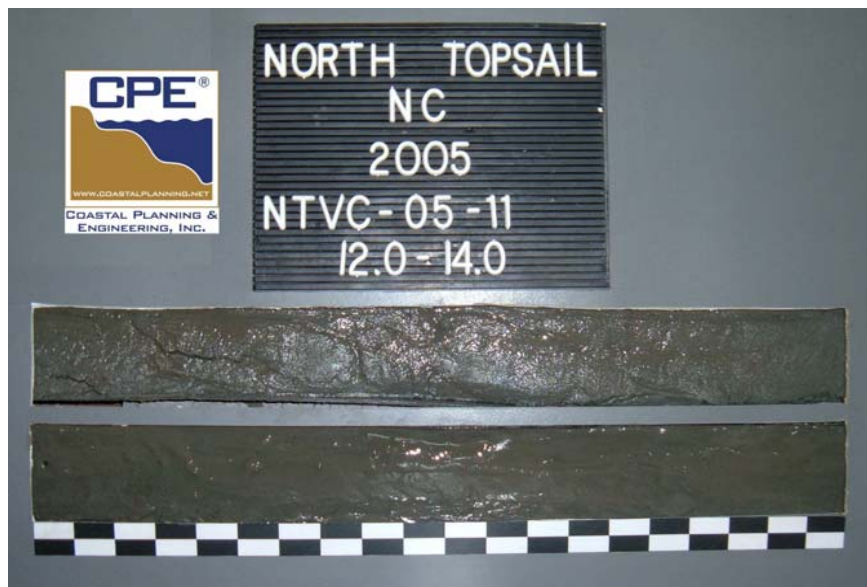
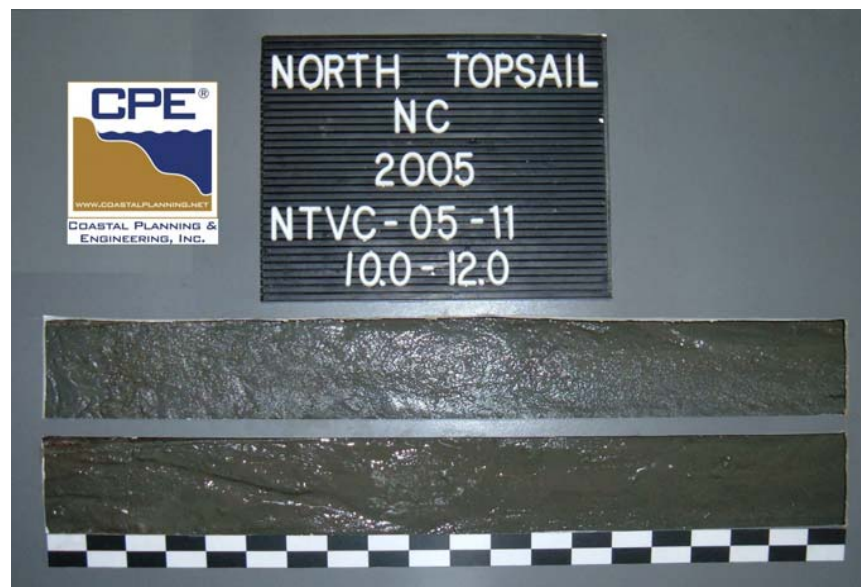


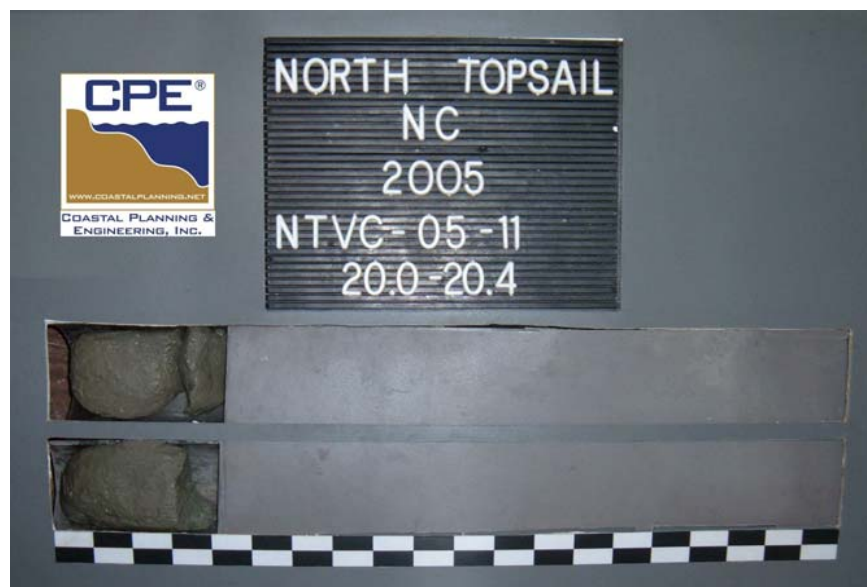


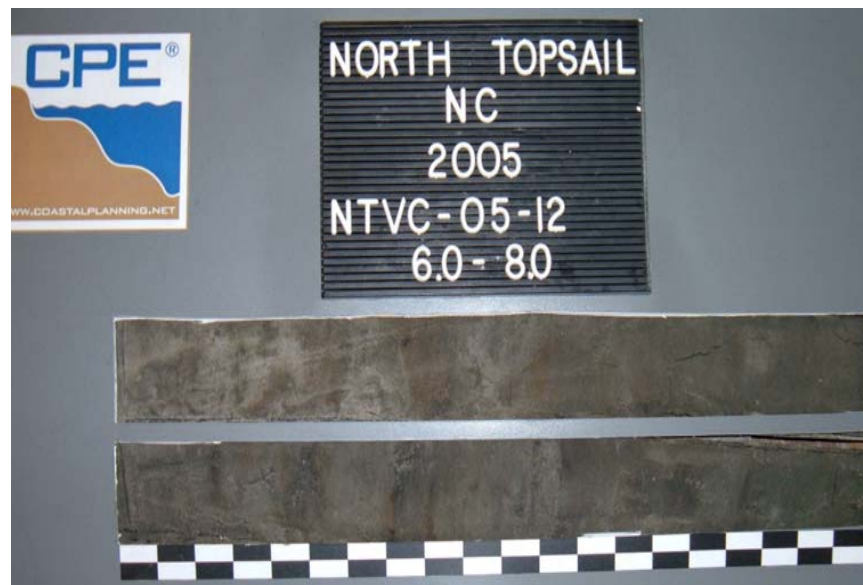
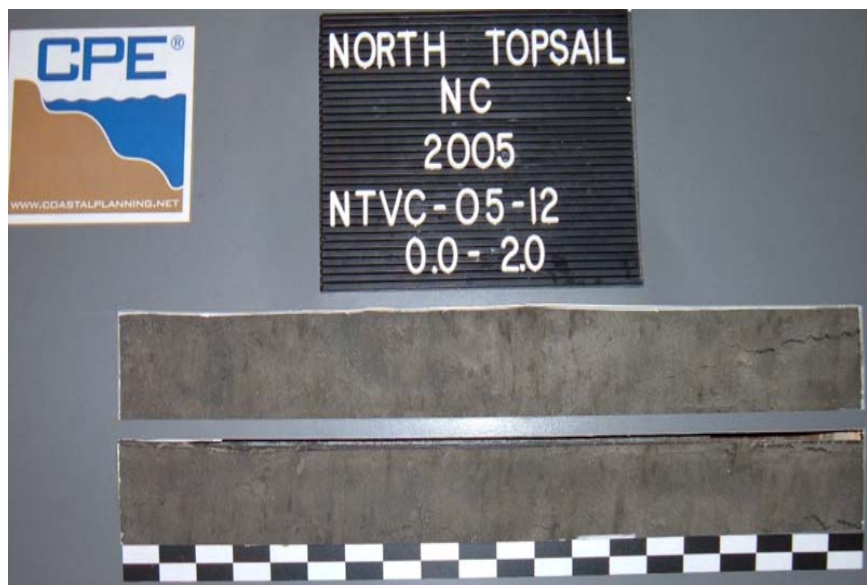


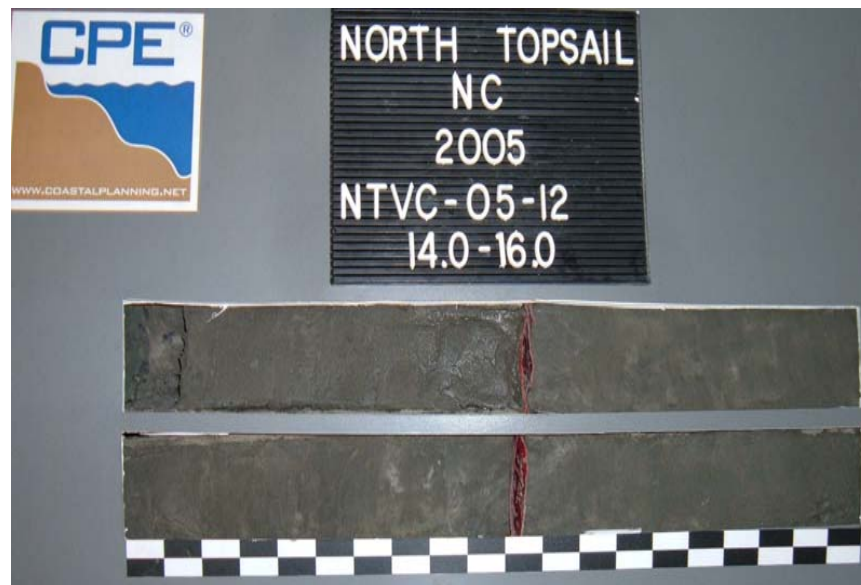
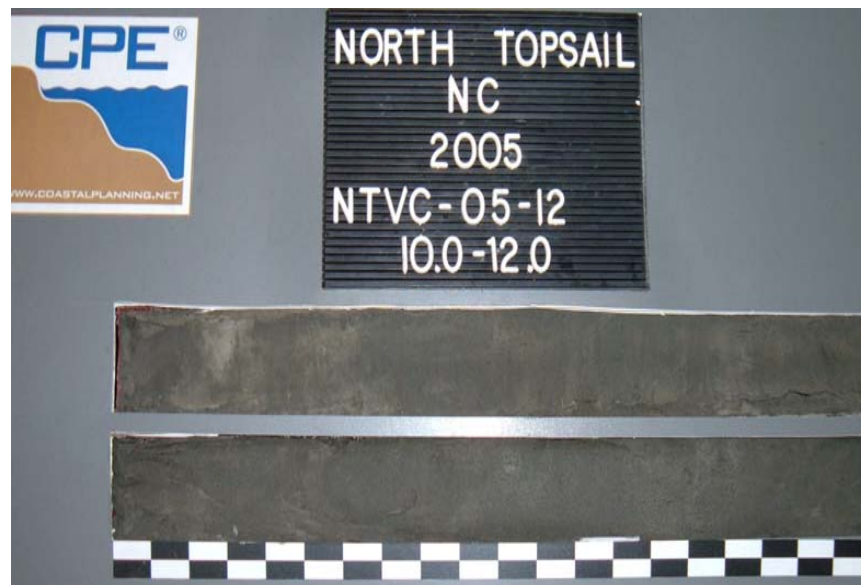
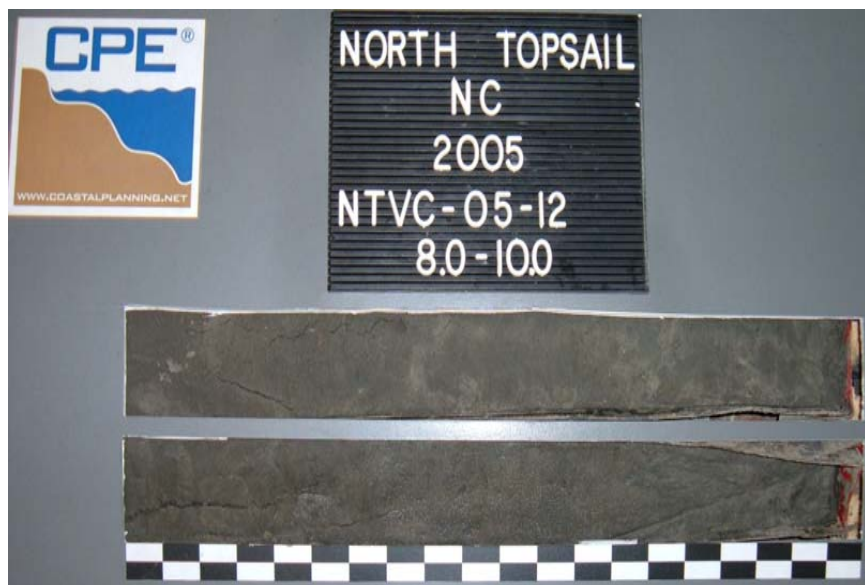


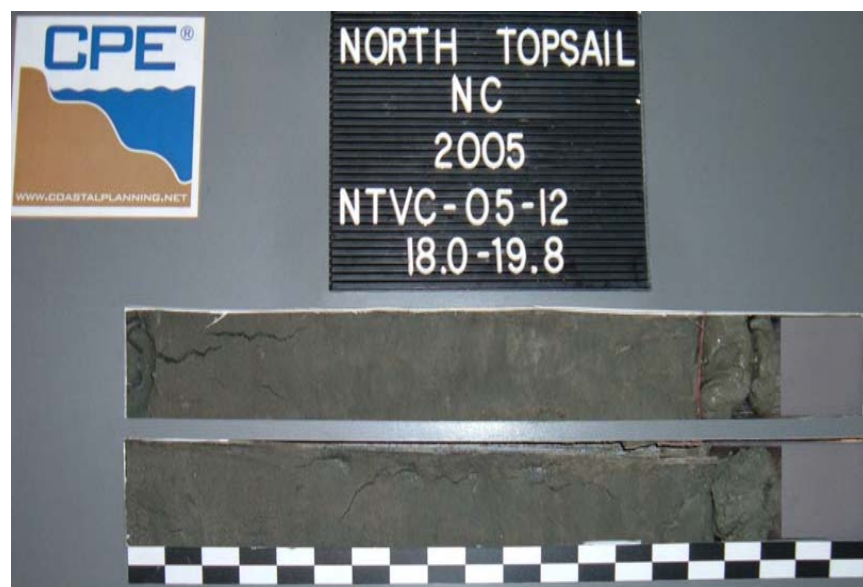
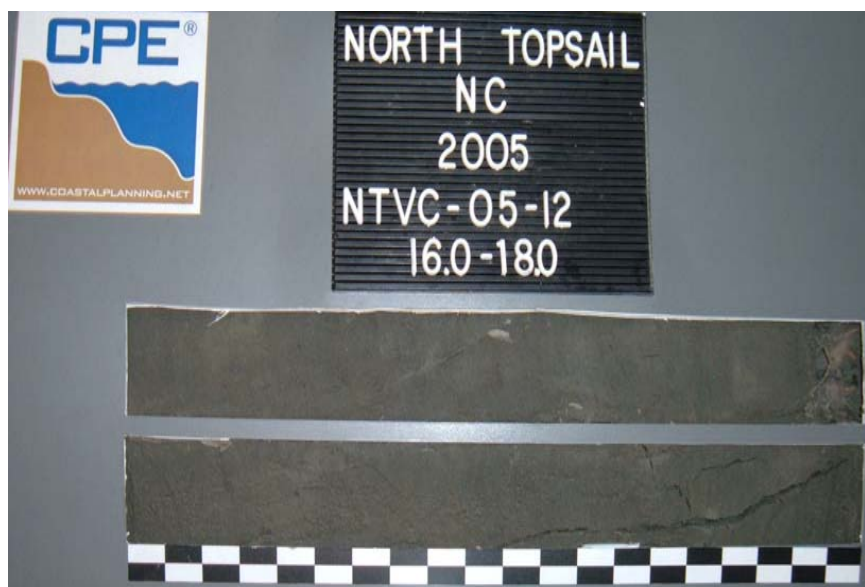


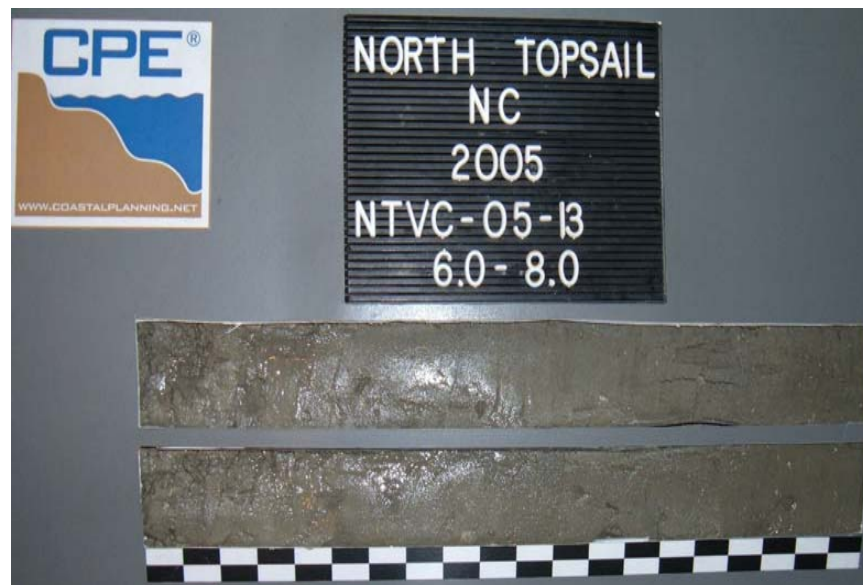
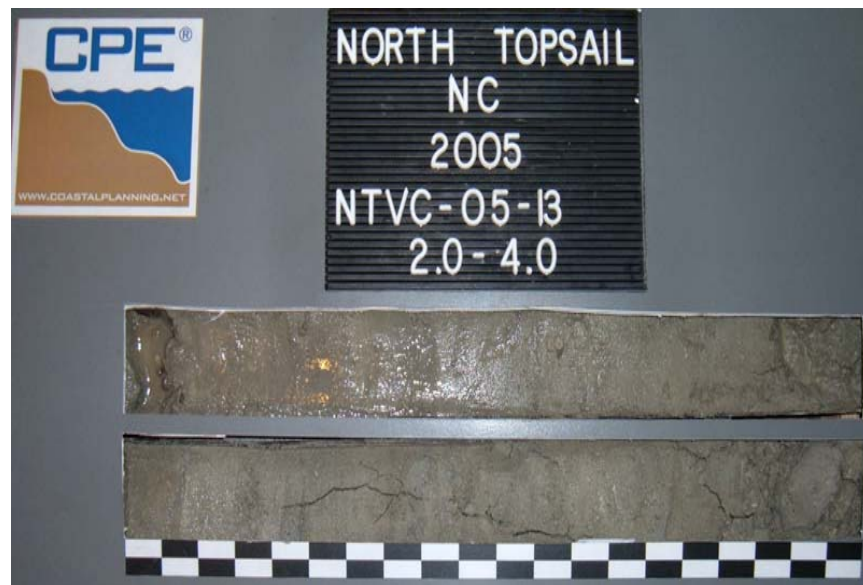
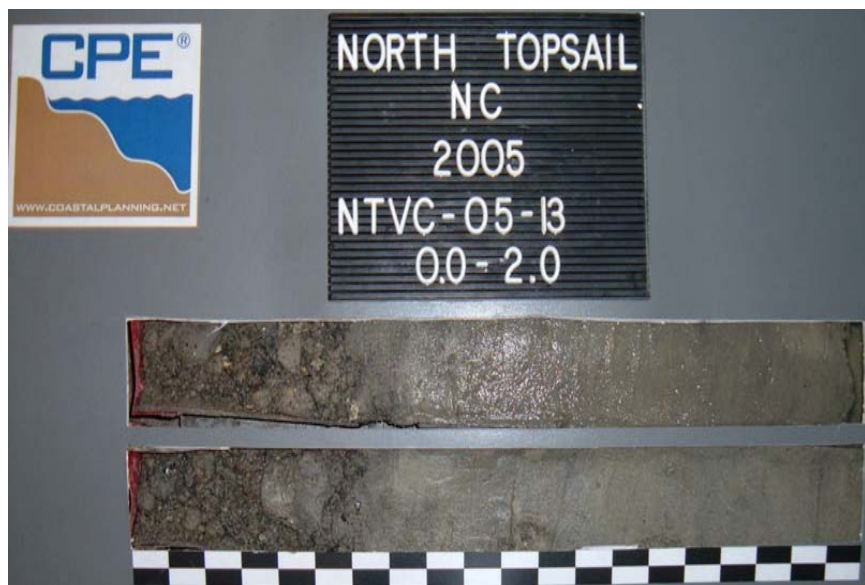


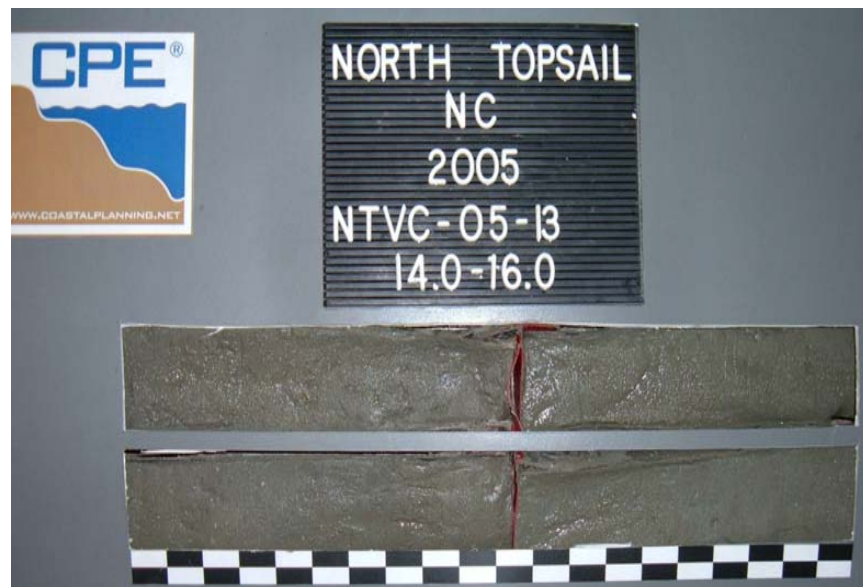
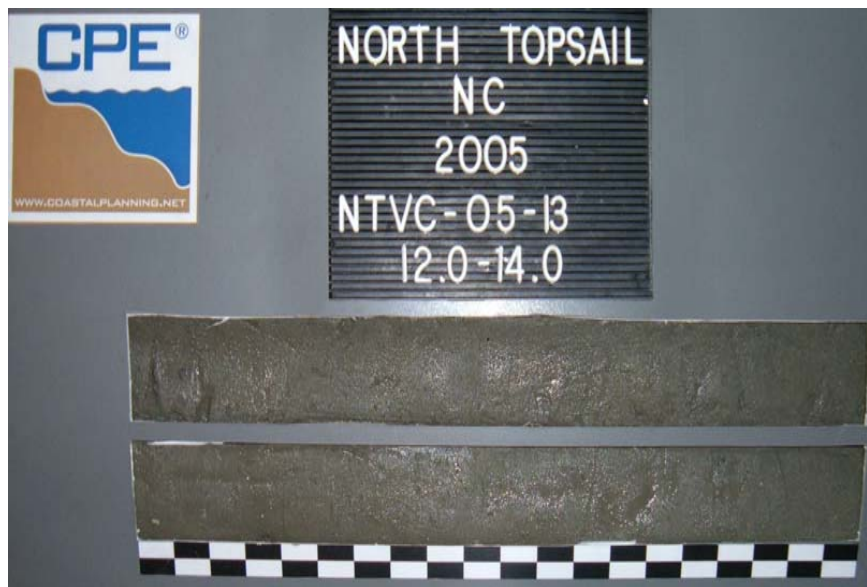
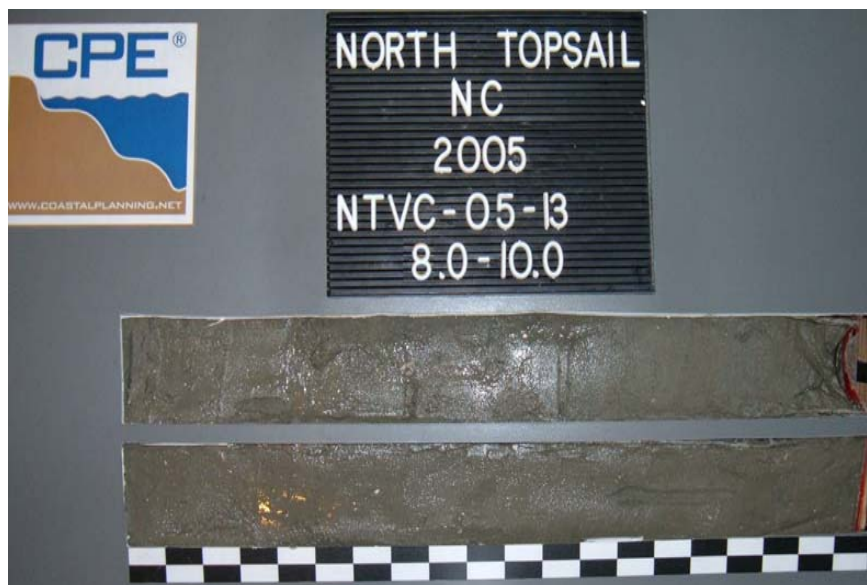


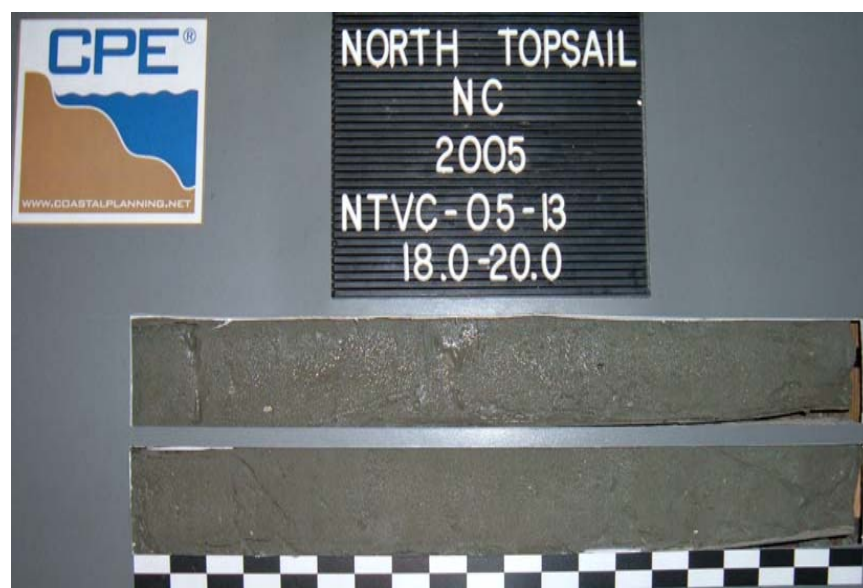
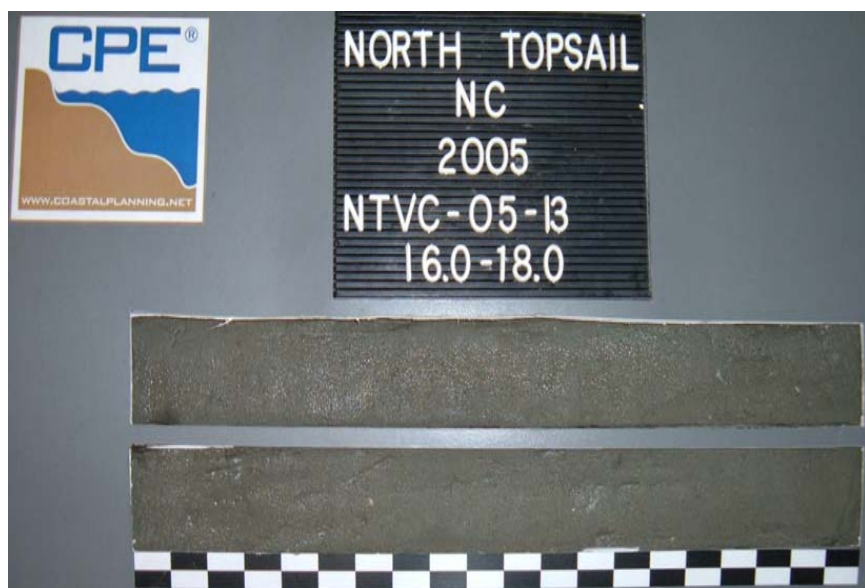


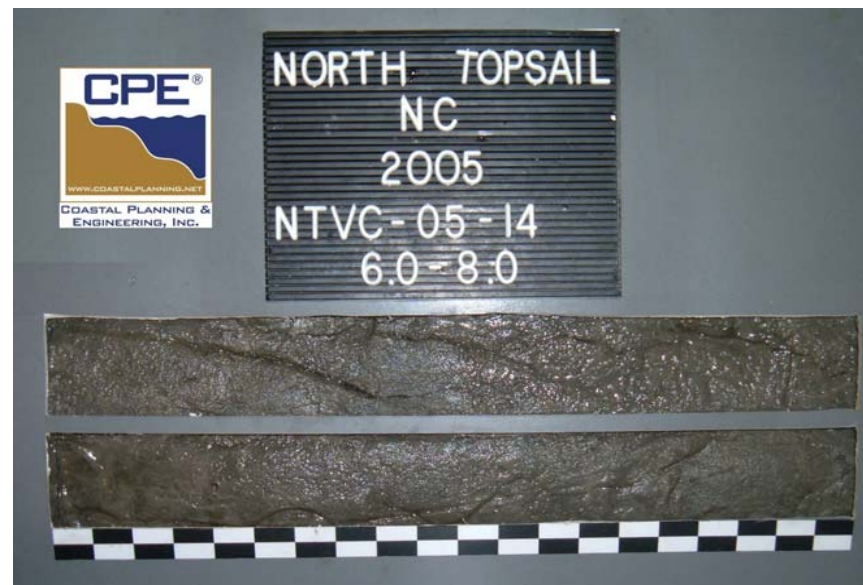
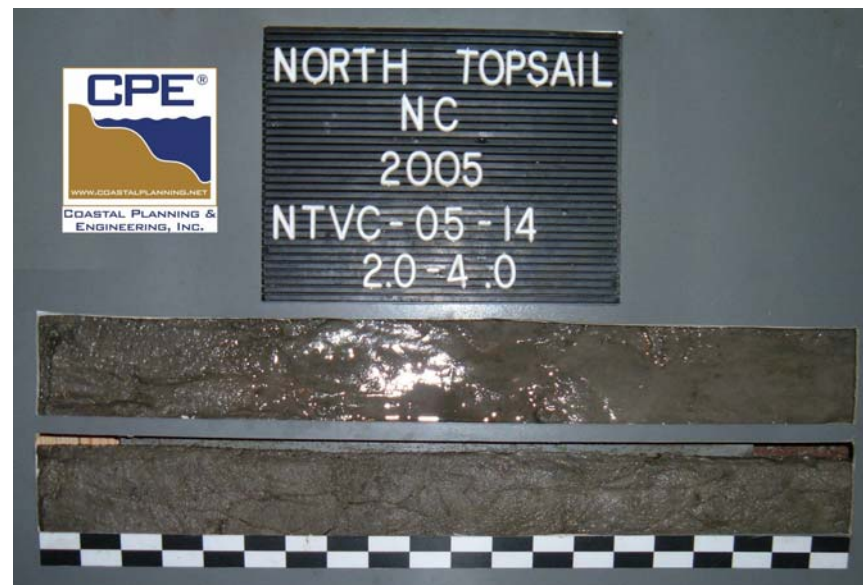
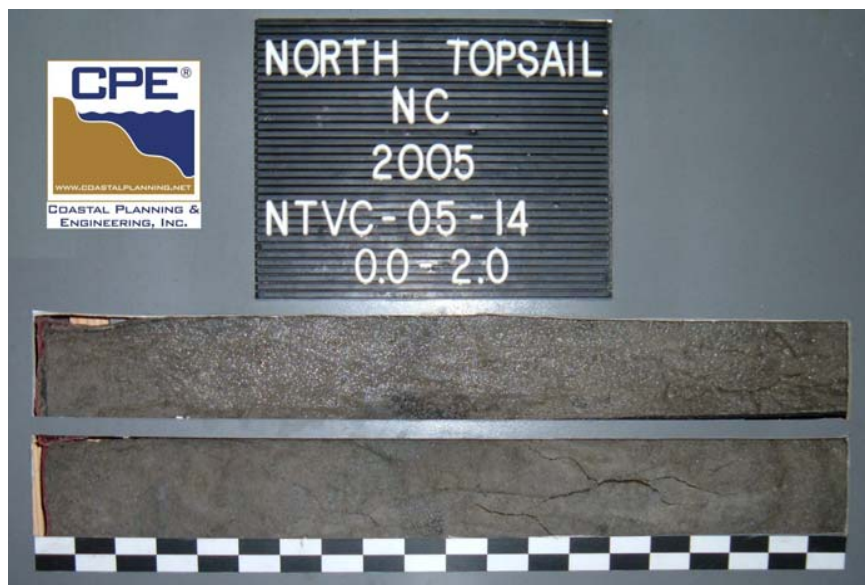


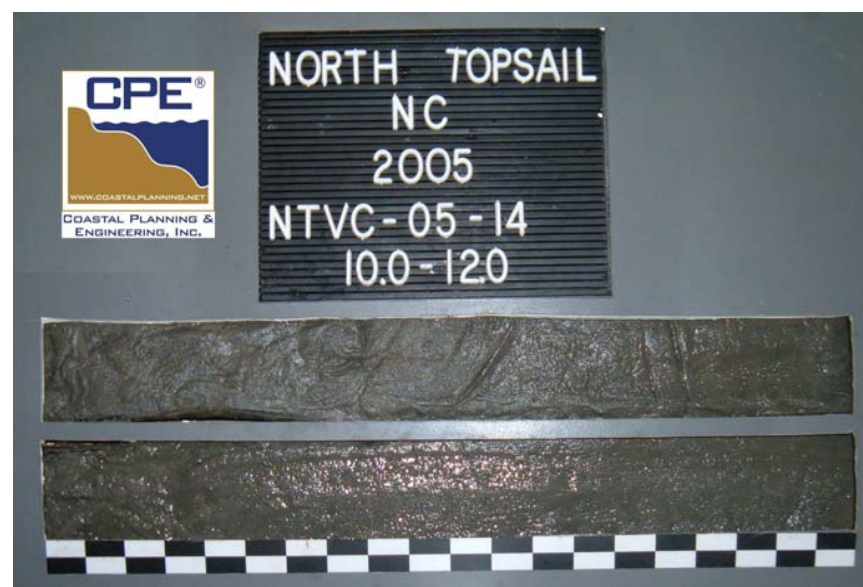
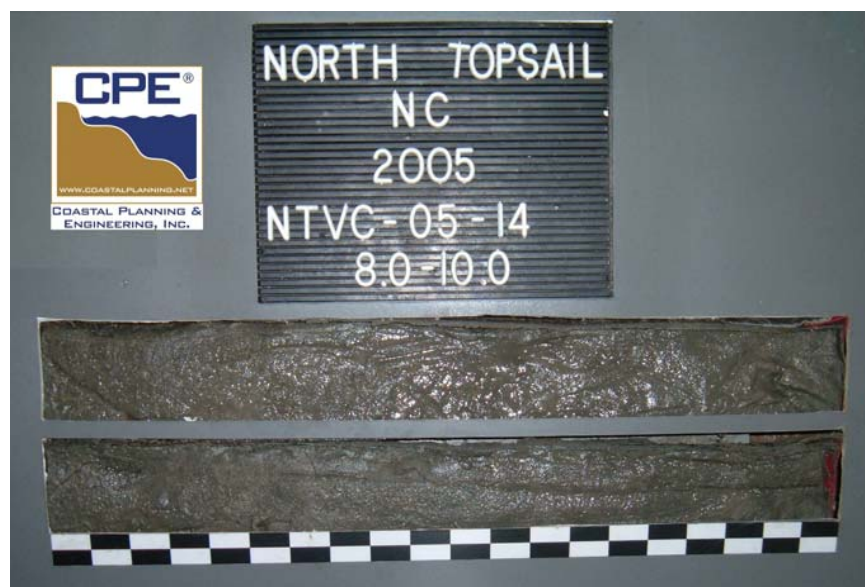




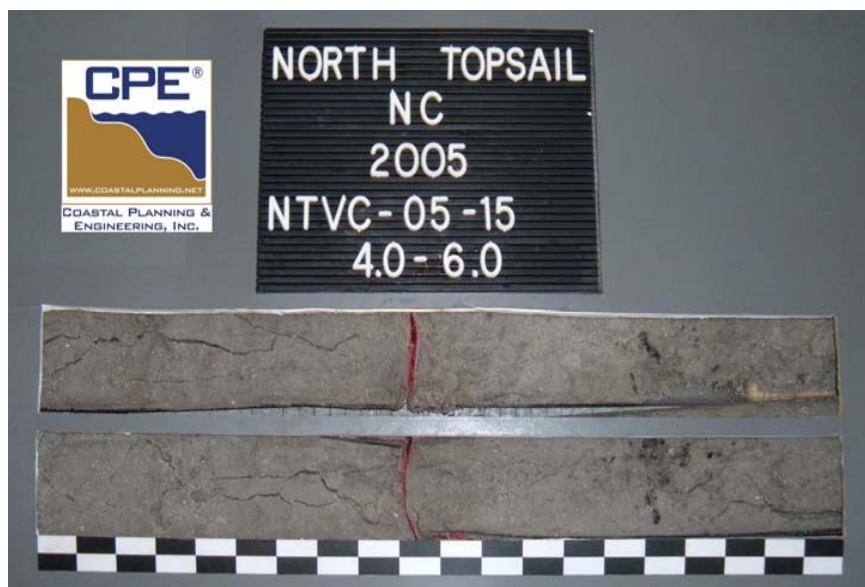


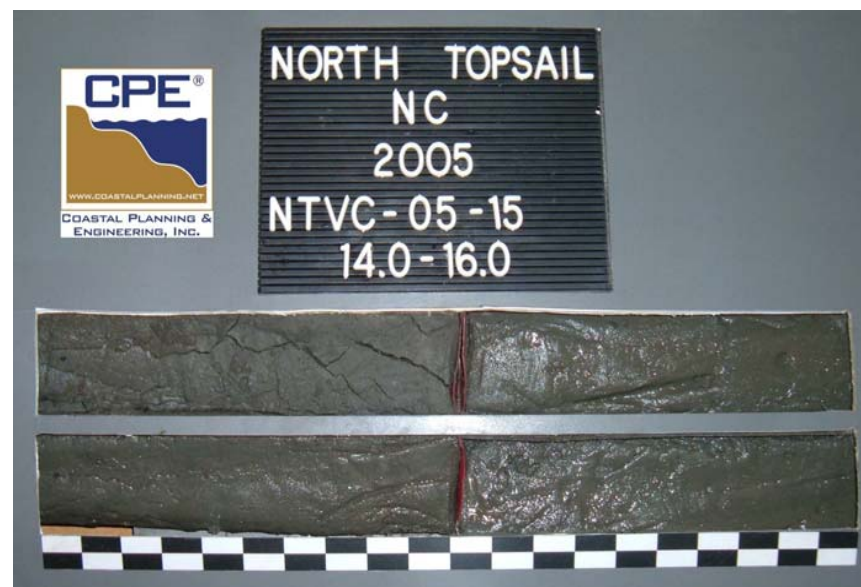
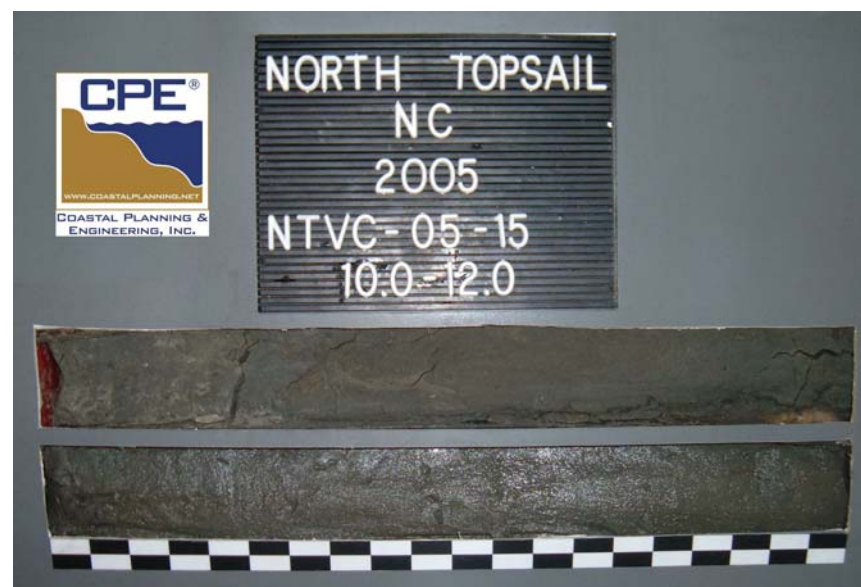
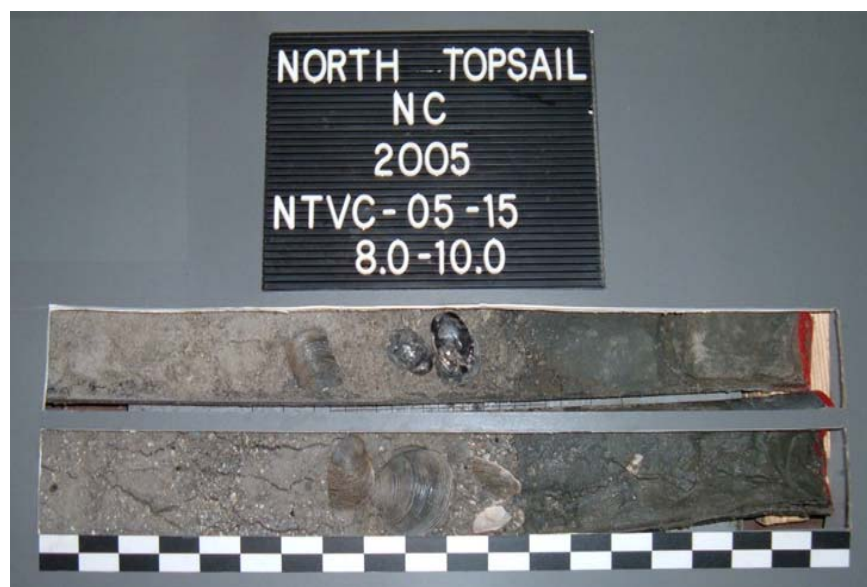




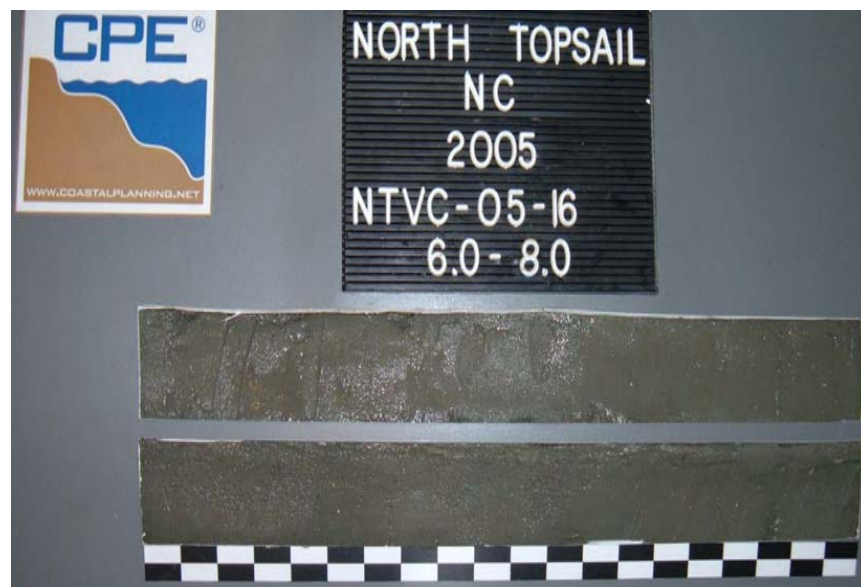
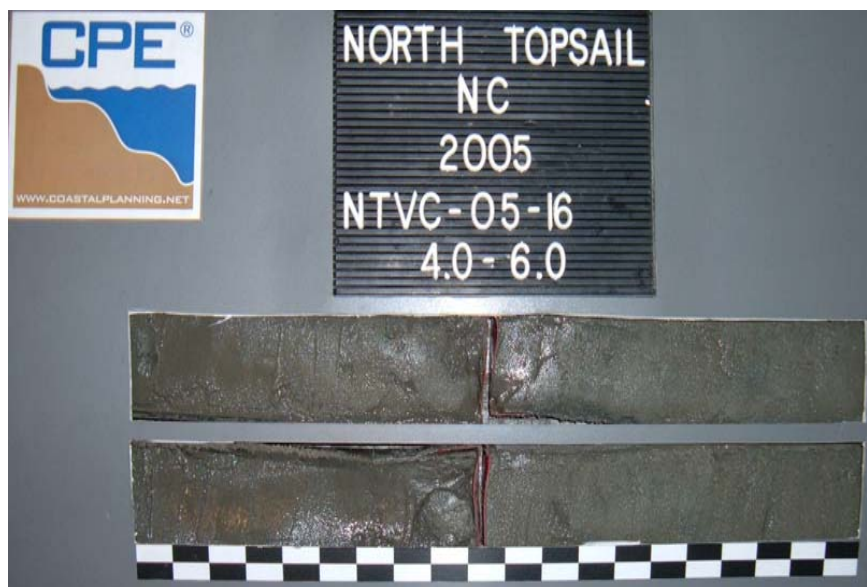
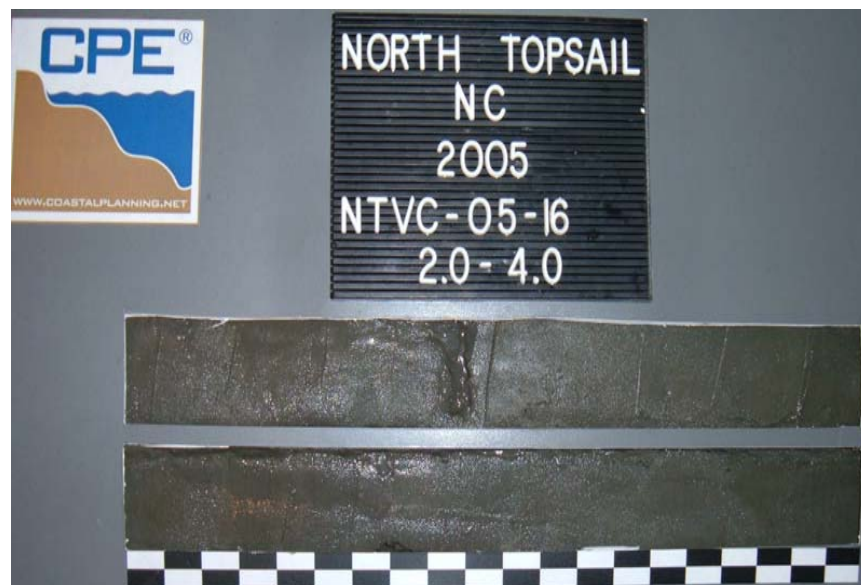


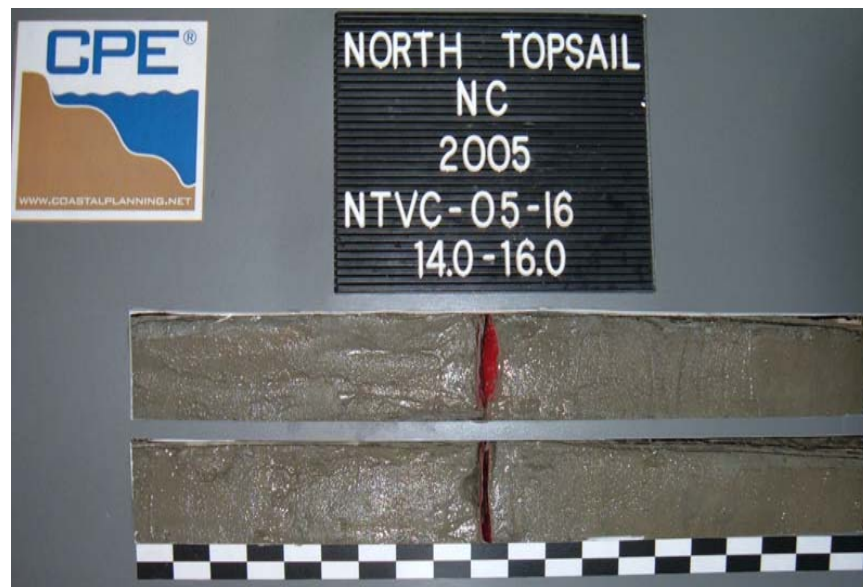
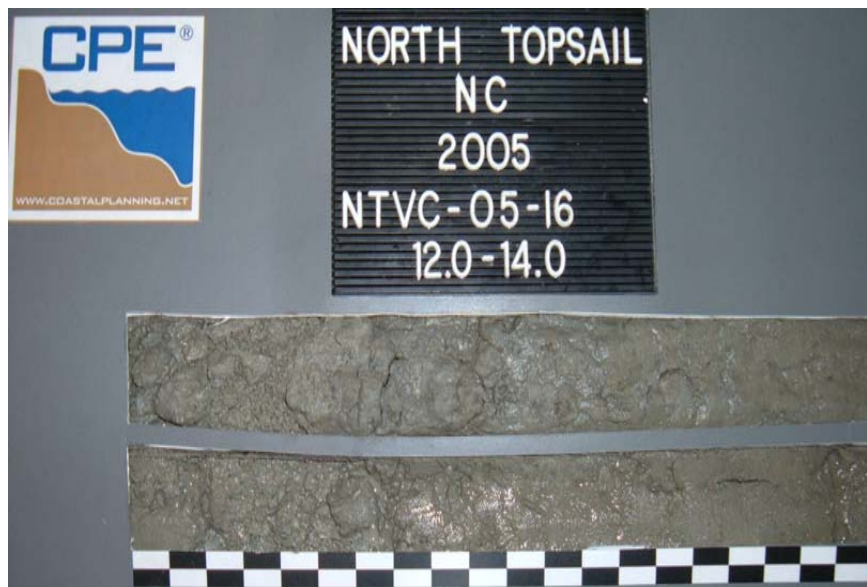
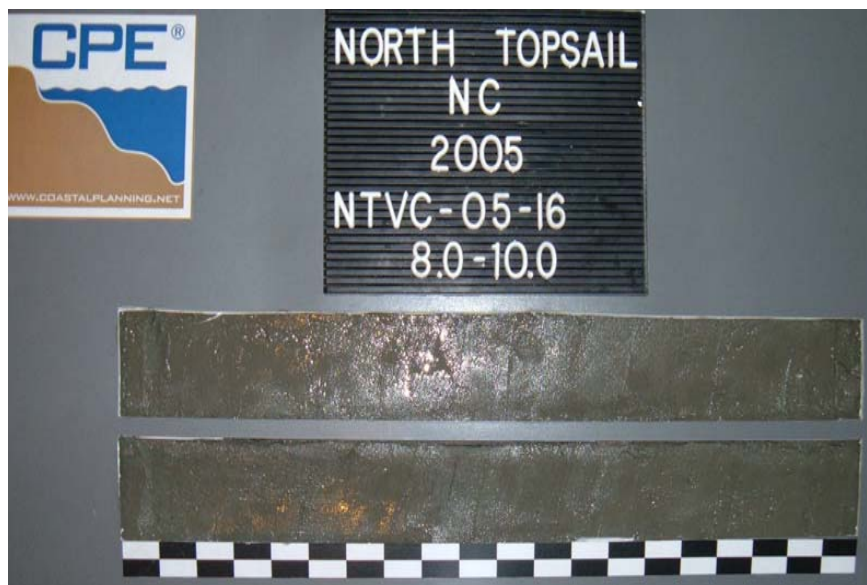


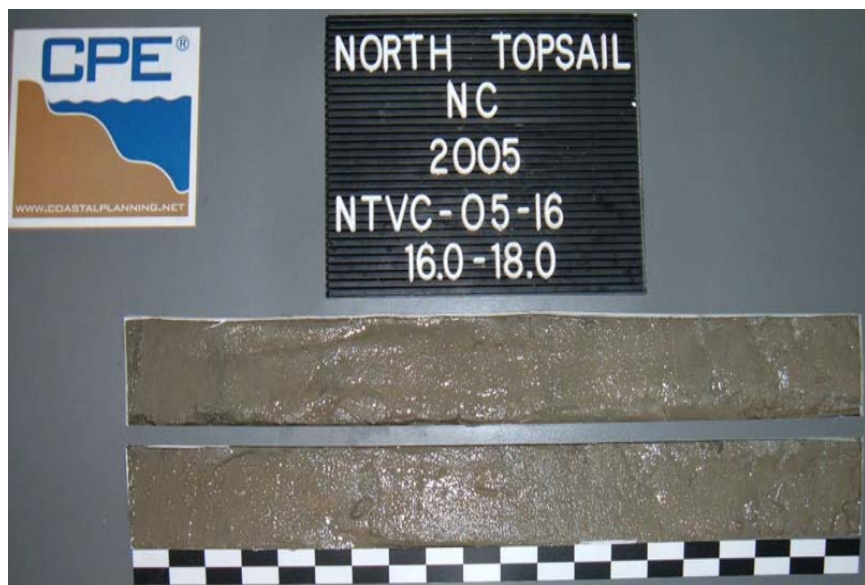


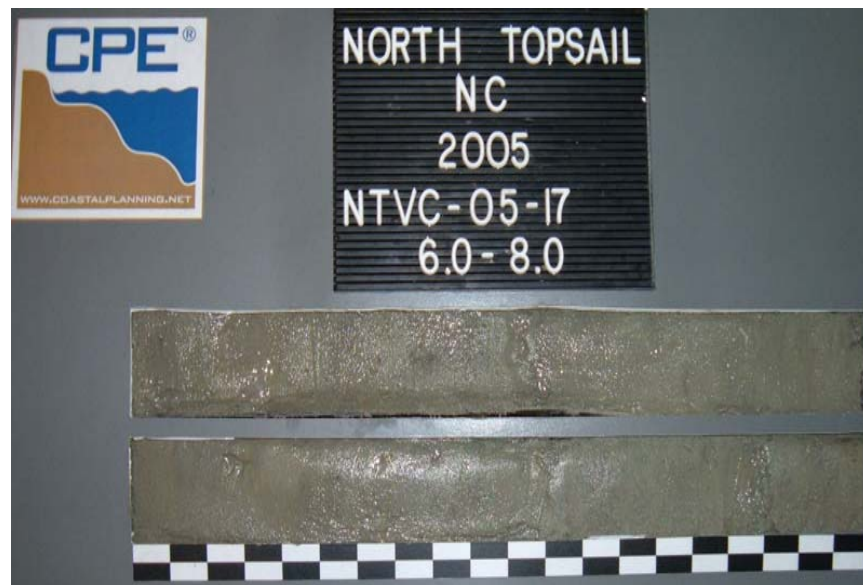
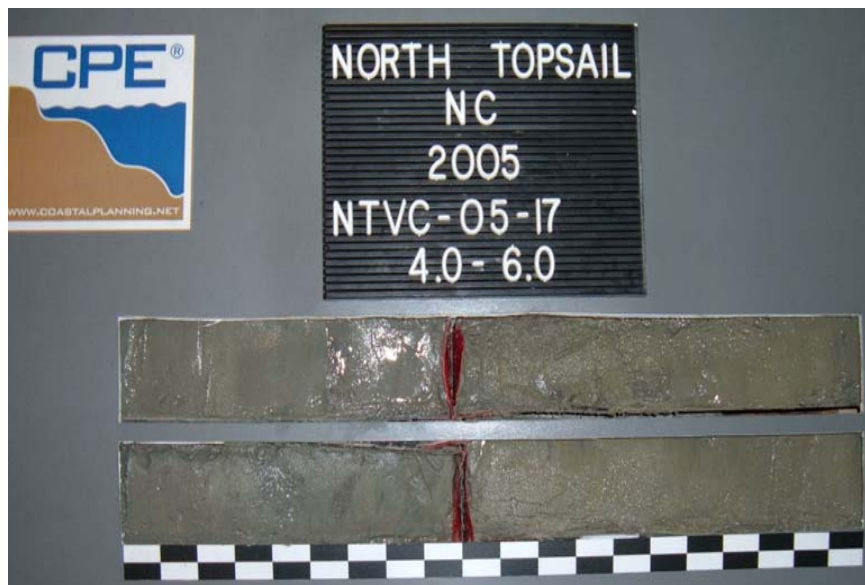
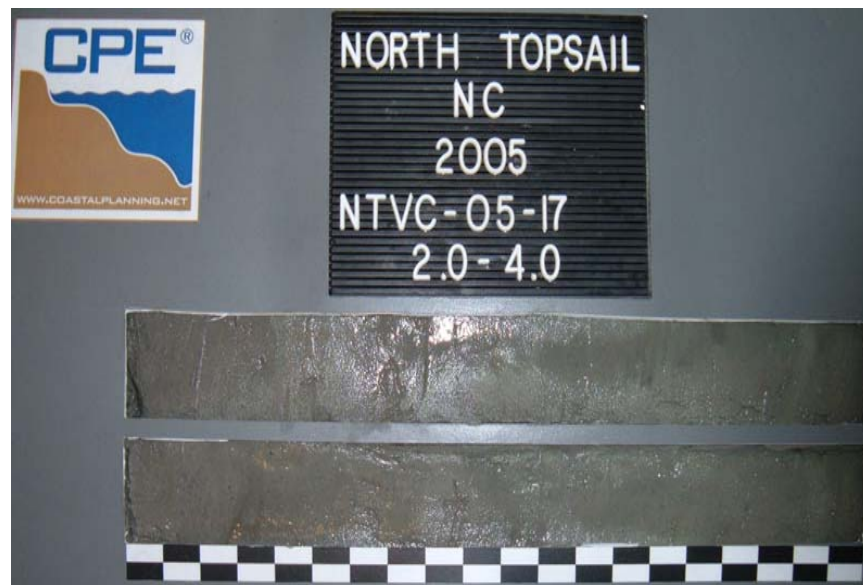
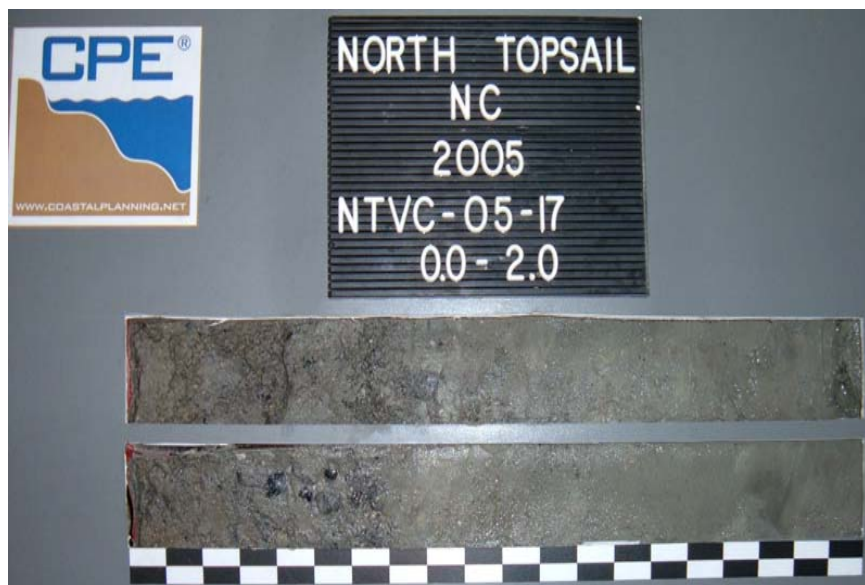


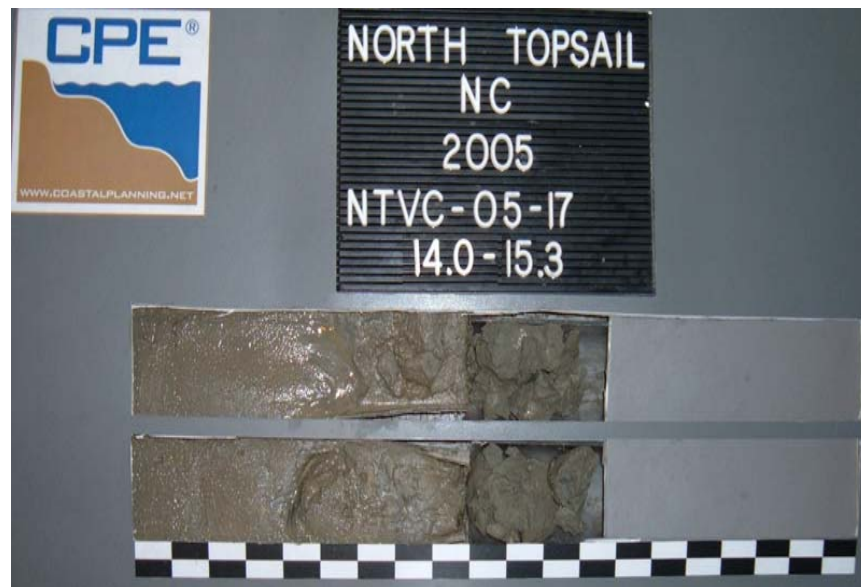
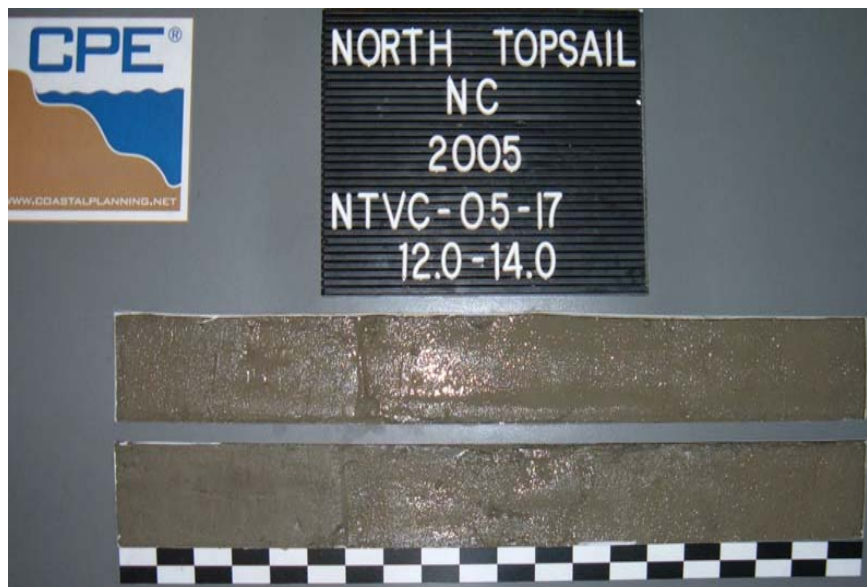
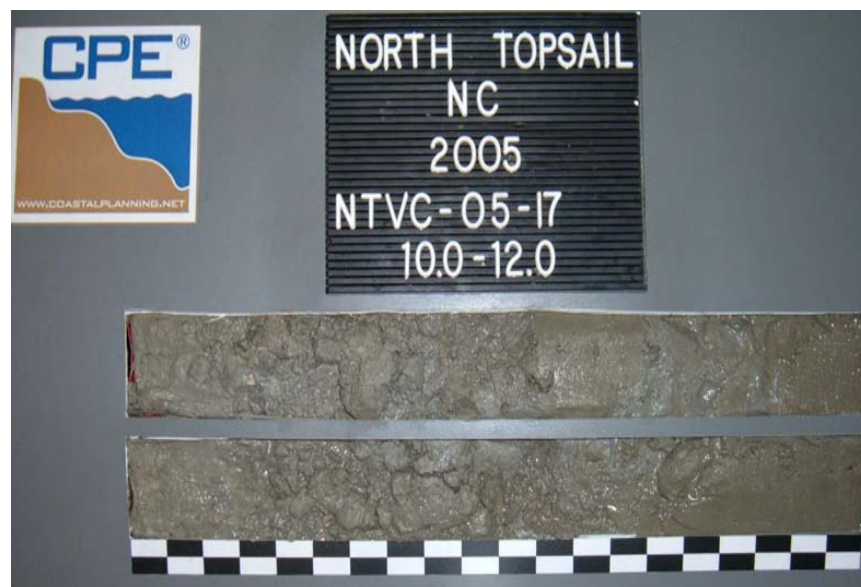
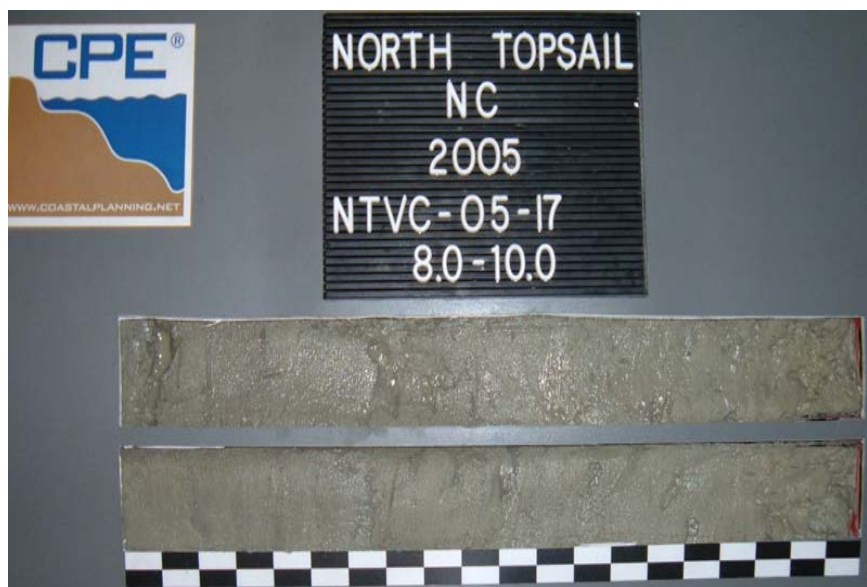


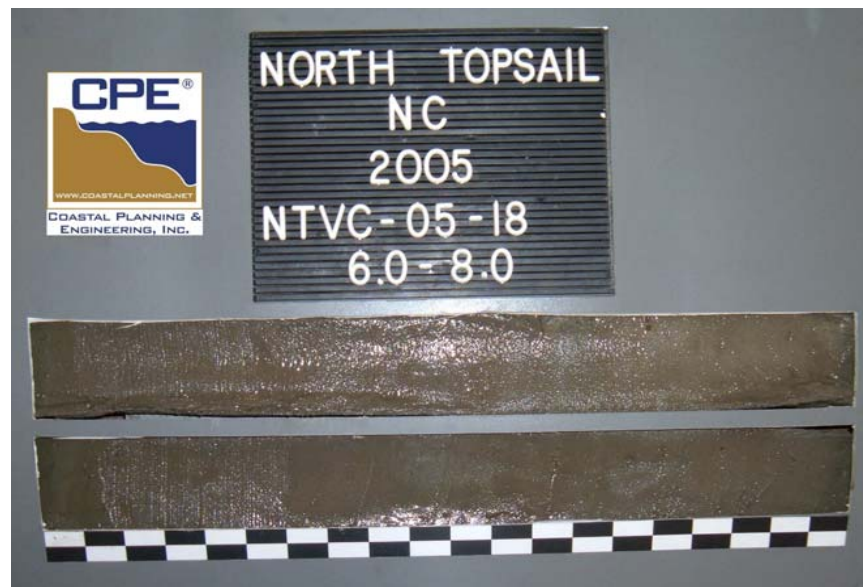
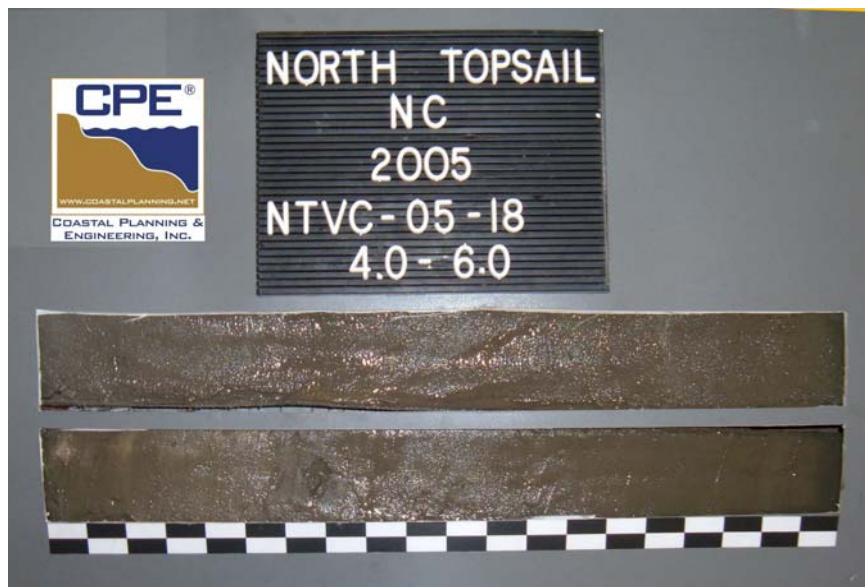




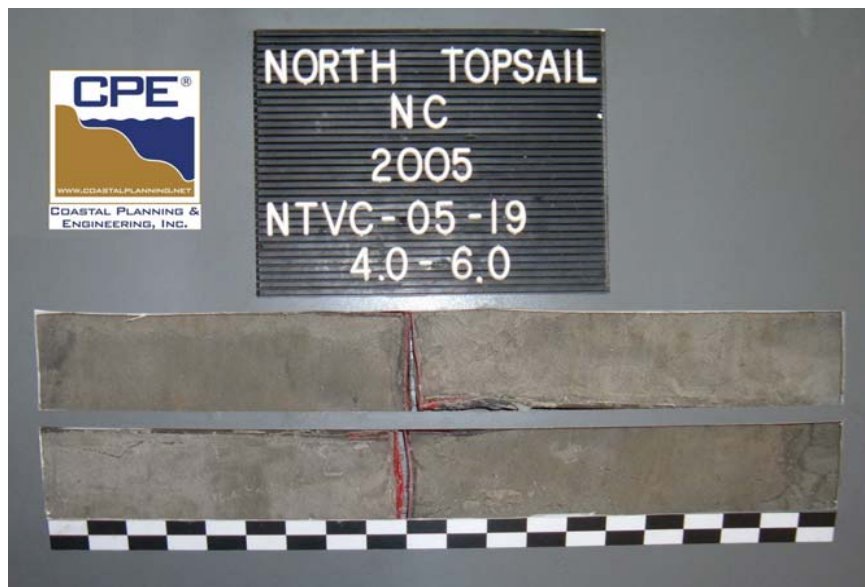
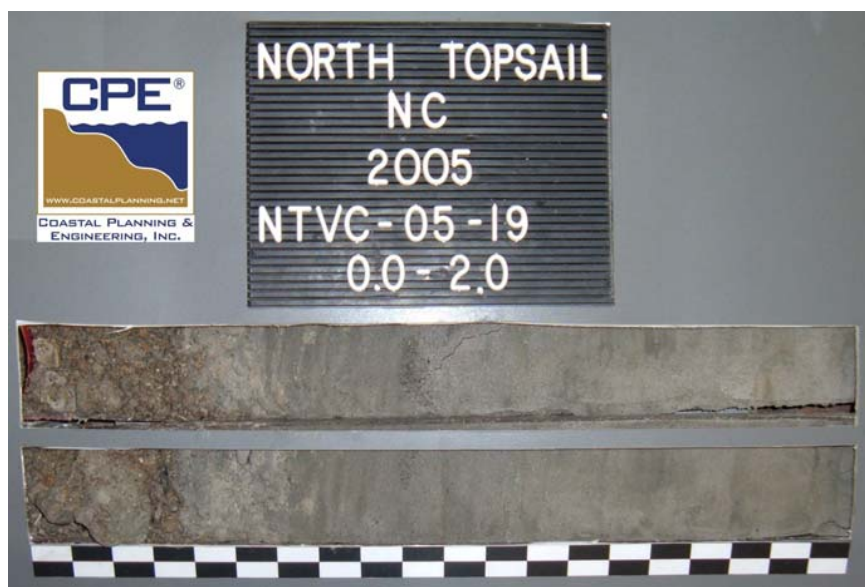


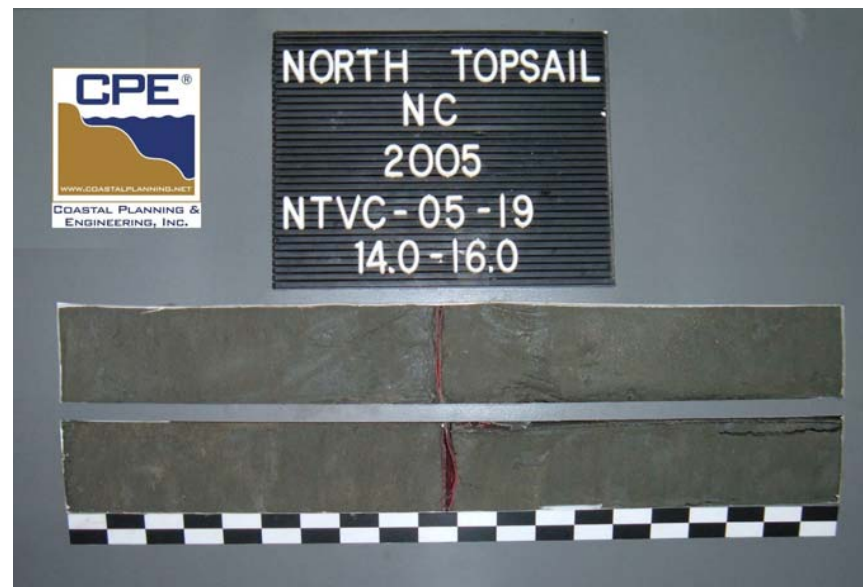








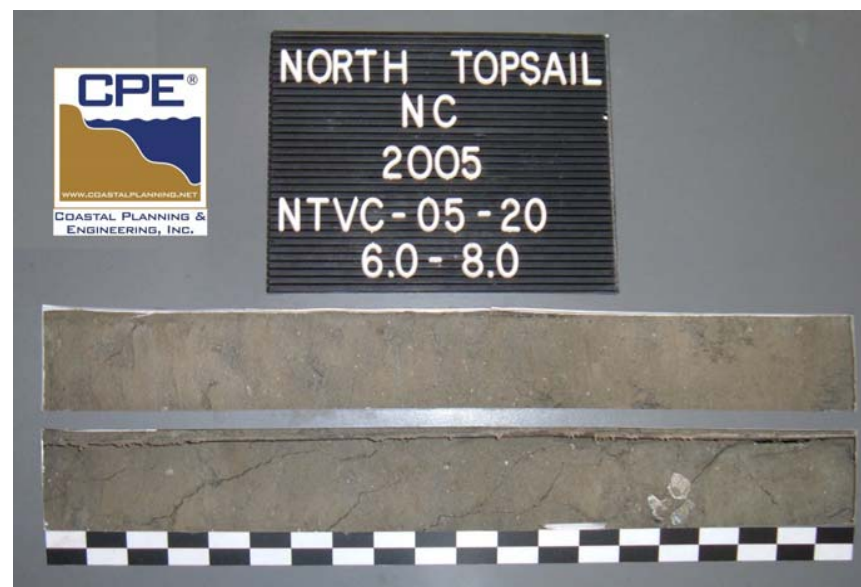
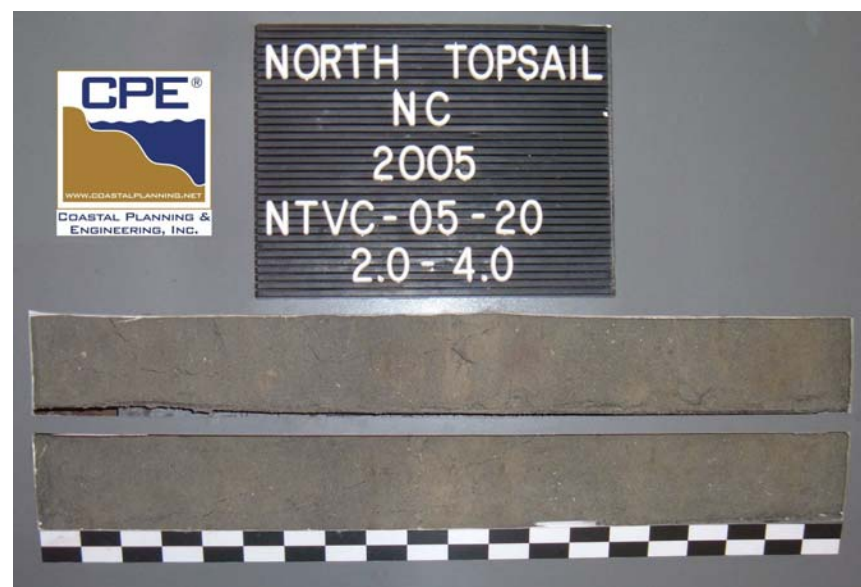






NORTH TOPSAIL
NC
2005
NTVC-05-19
16.0-17.0

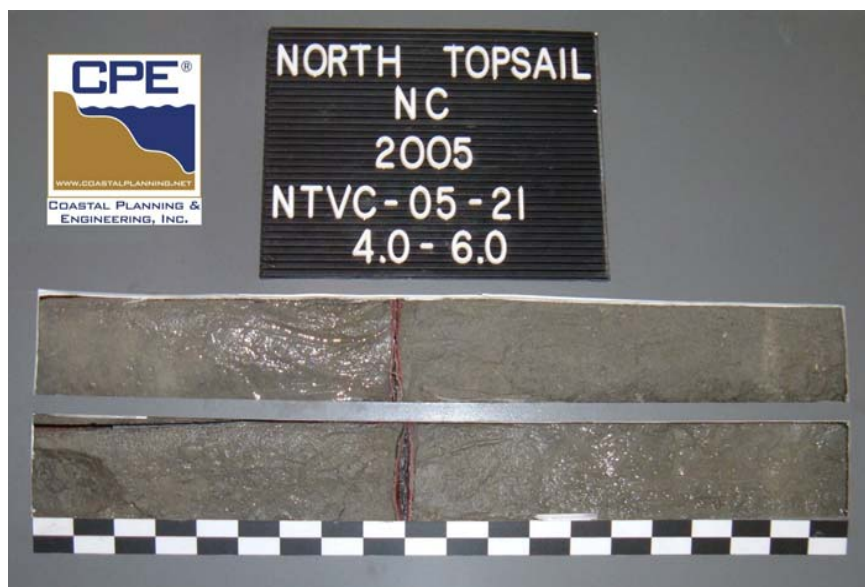
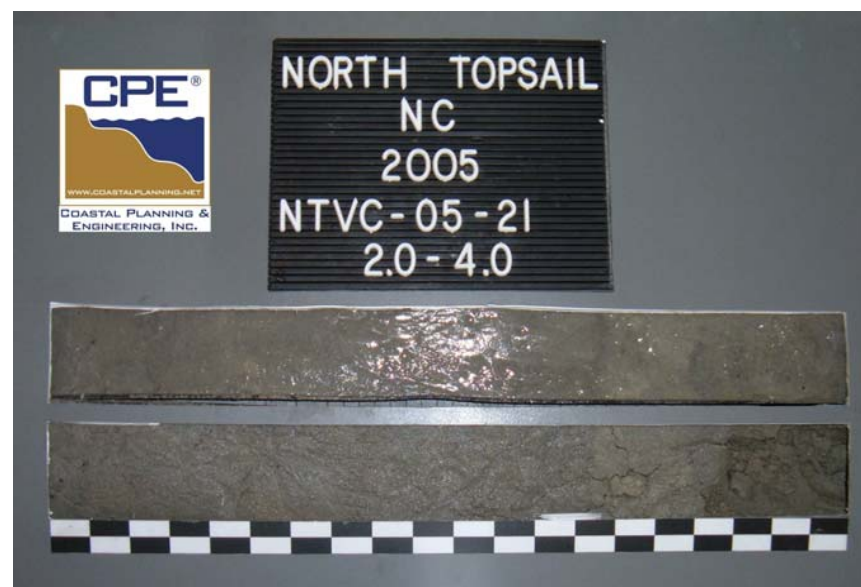


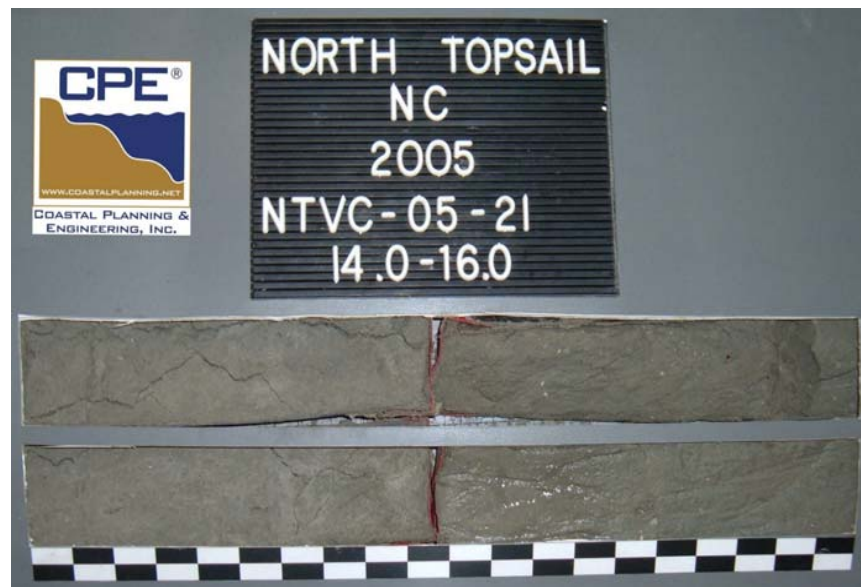
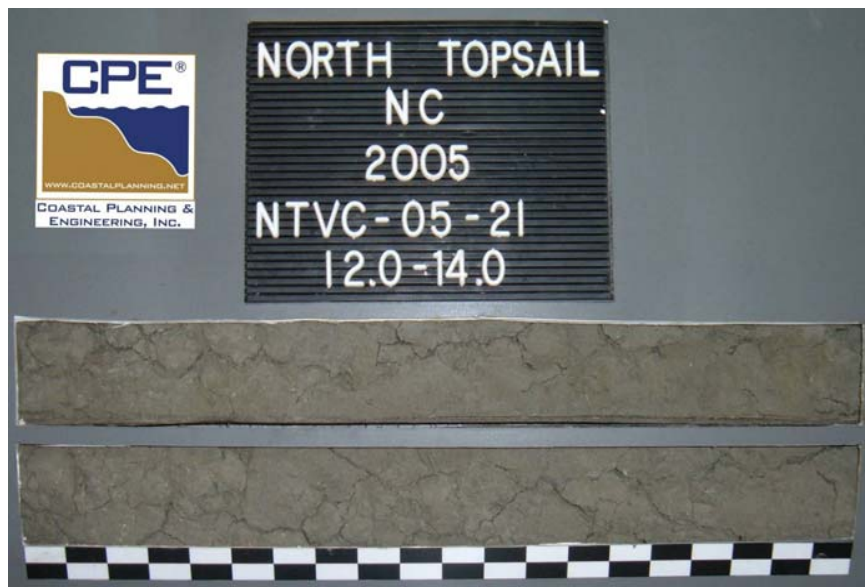
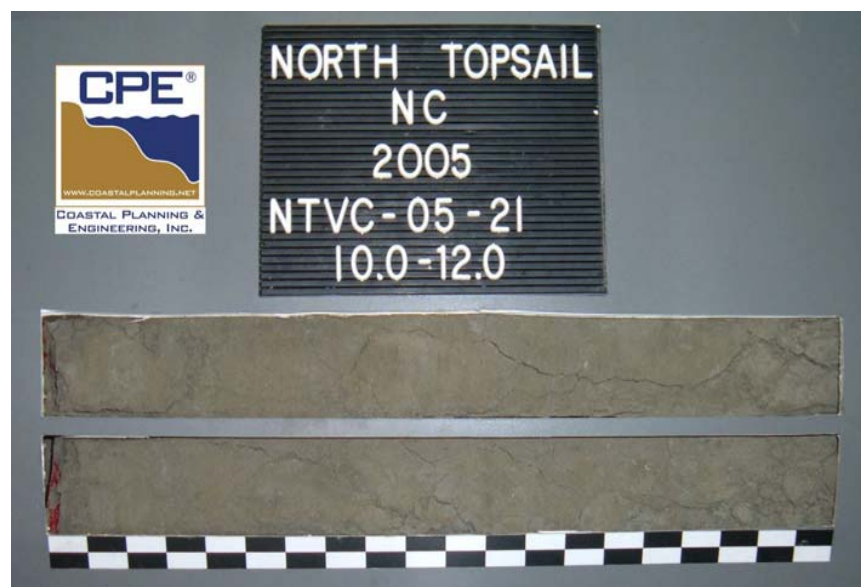




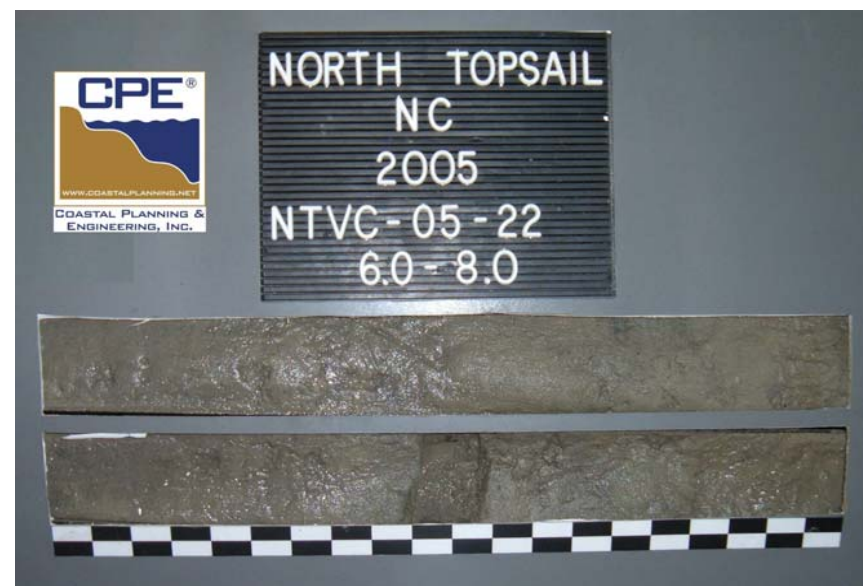
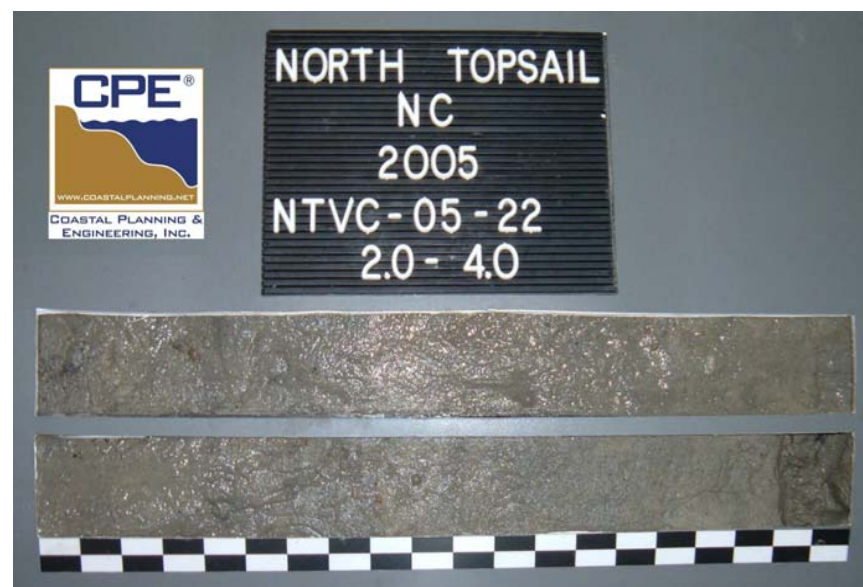
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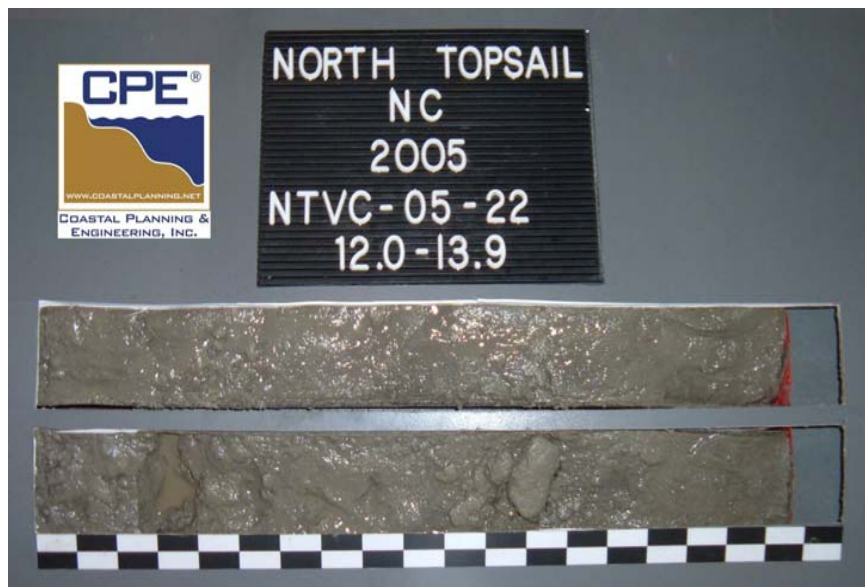
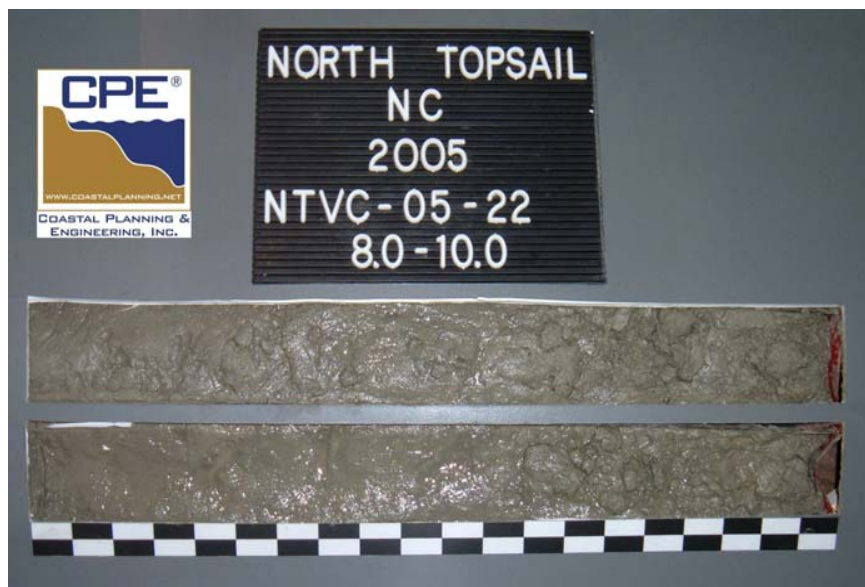














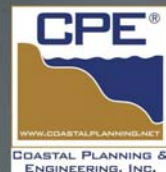
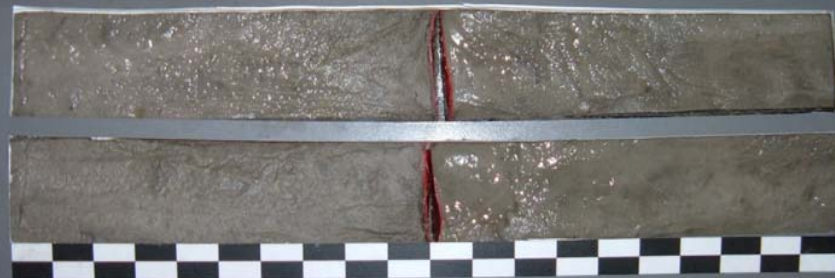
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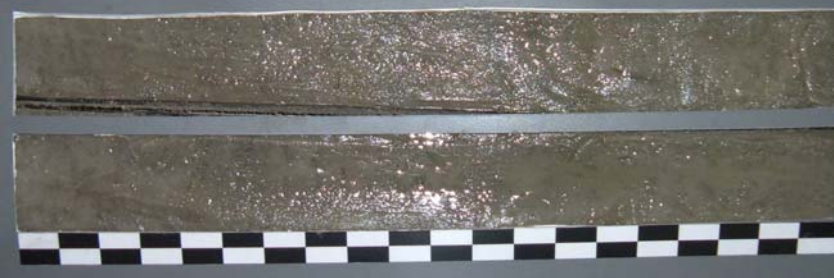
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2.0 - 4.0

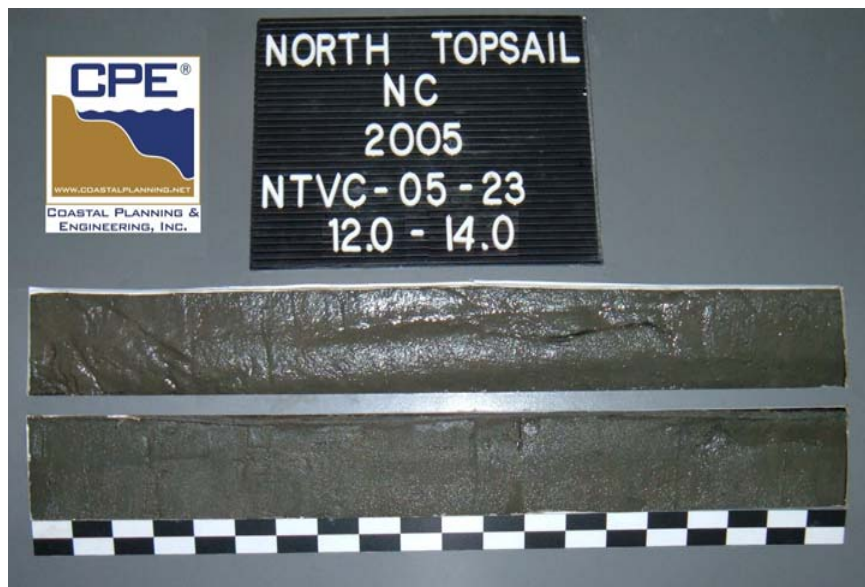
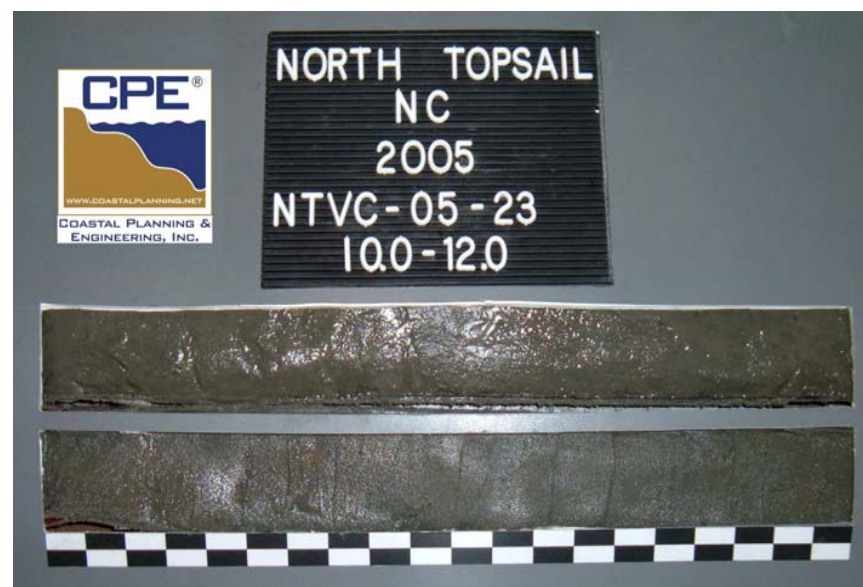
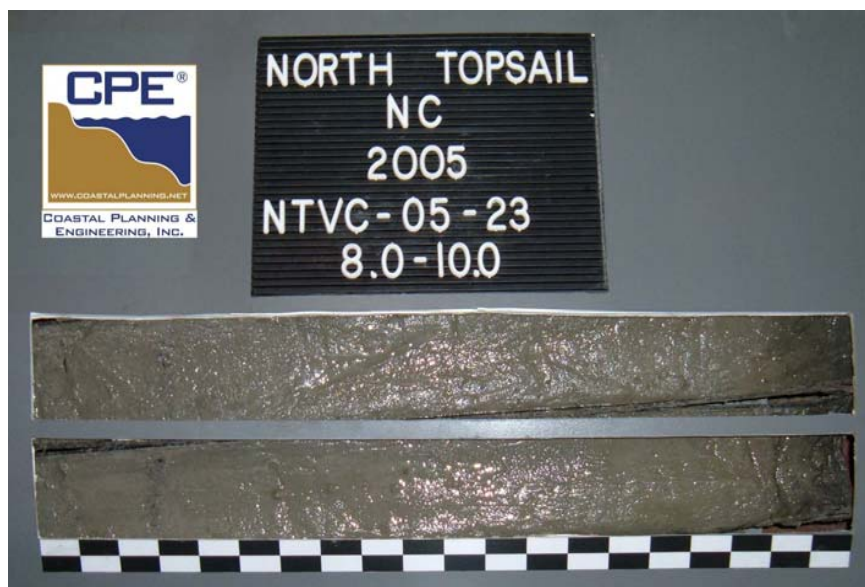


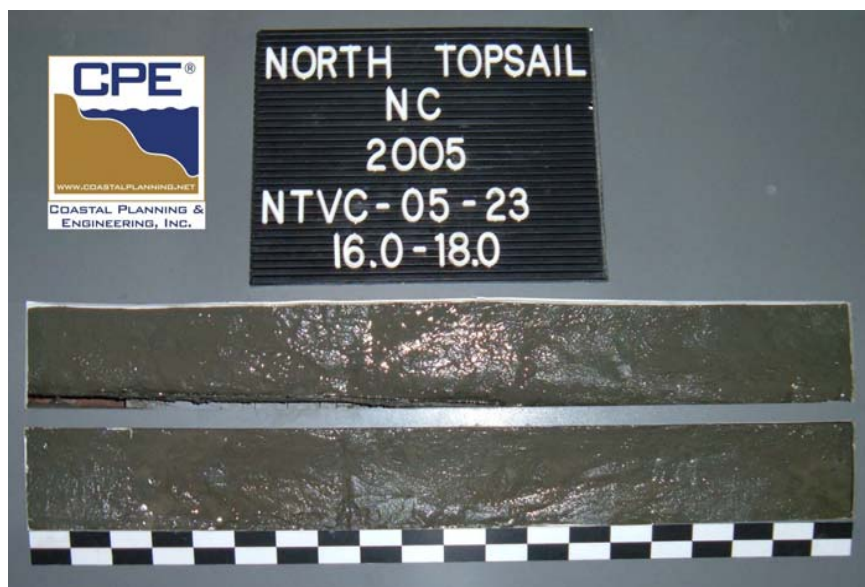
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2005
NTVC-05-23
4.0 - 6.0

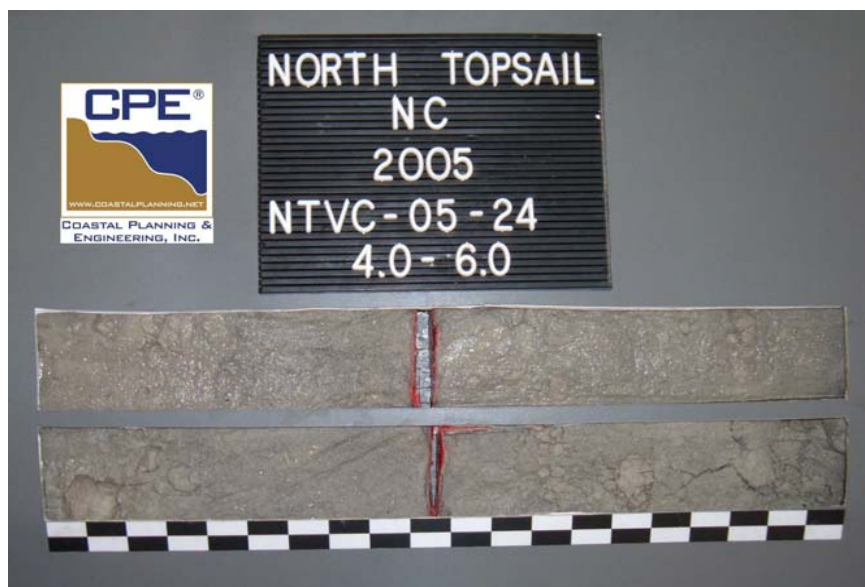


NORTH TOPSAIL
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2005
NTVC-05-23
6.0 - 8.0

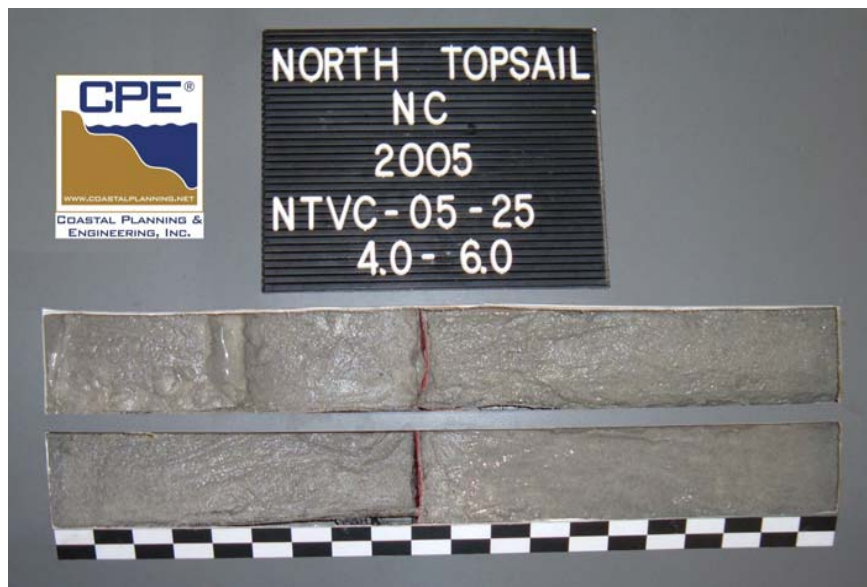
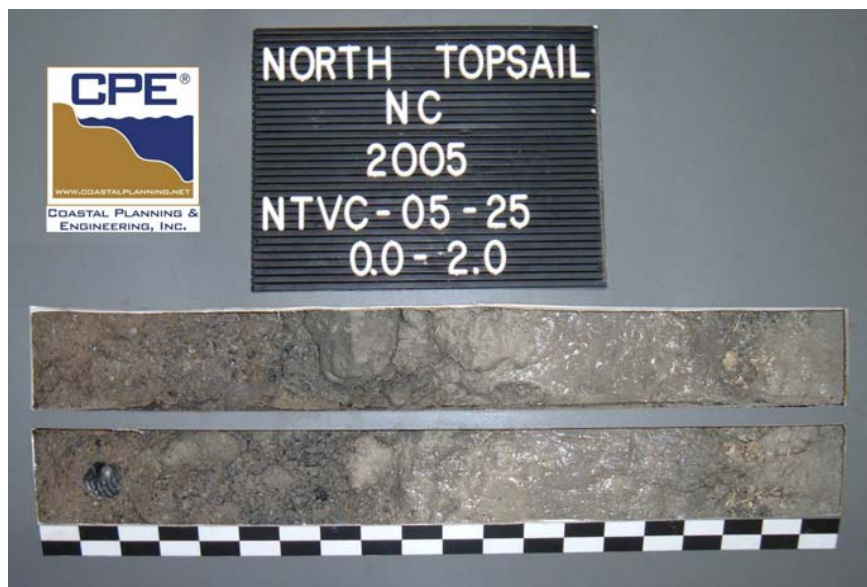


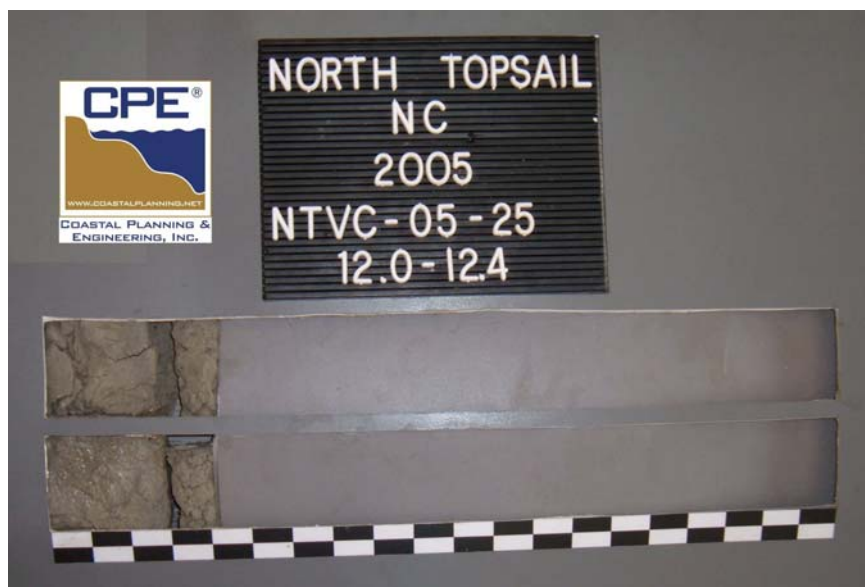
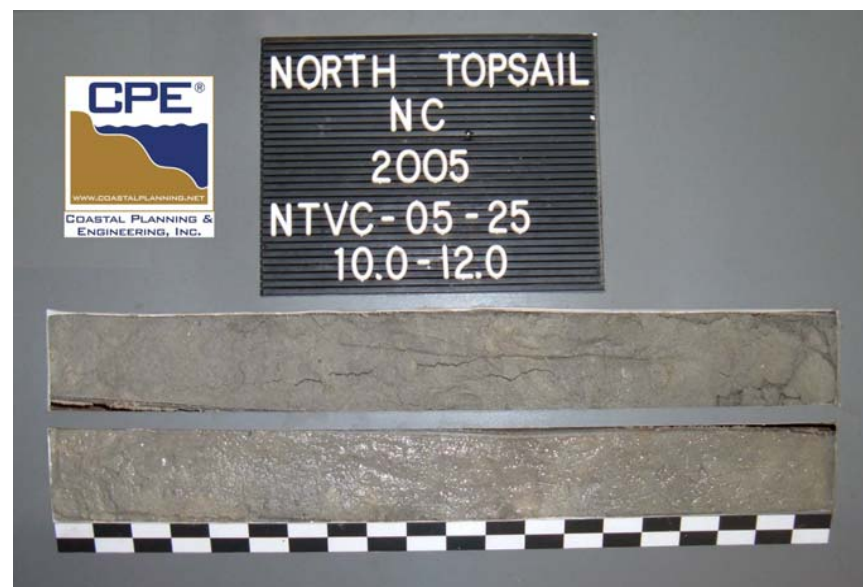
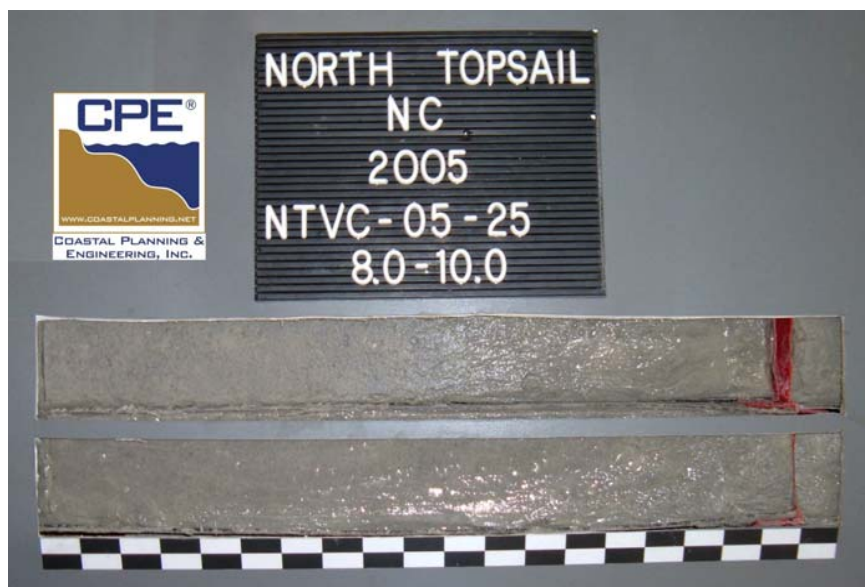


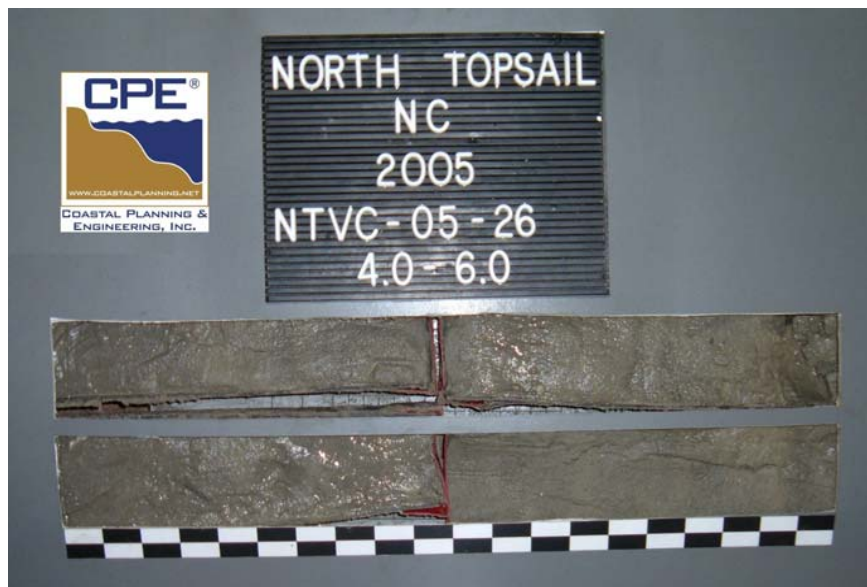
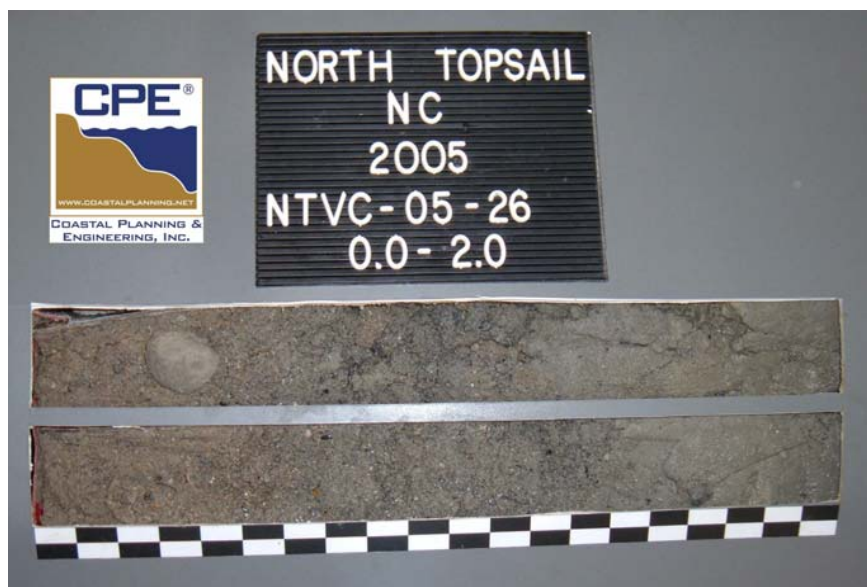


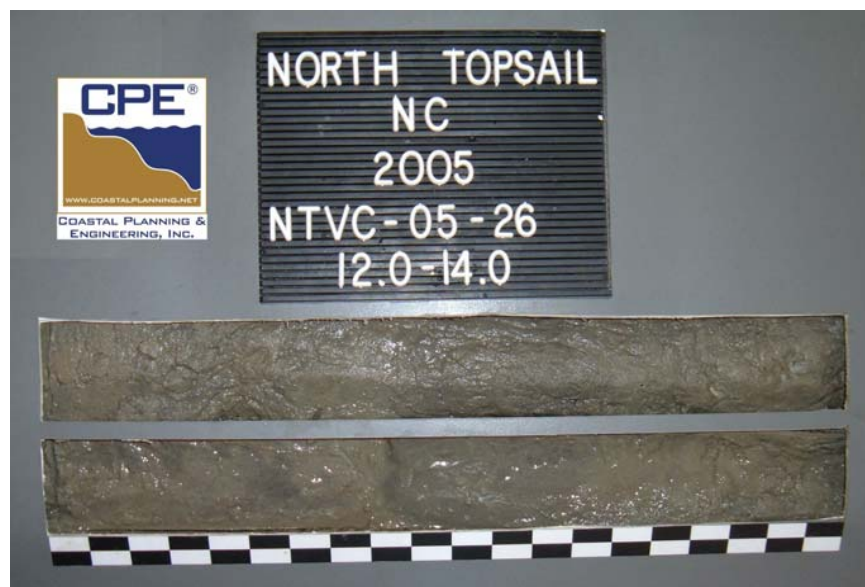
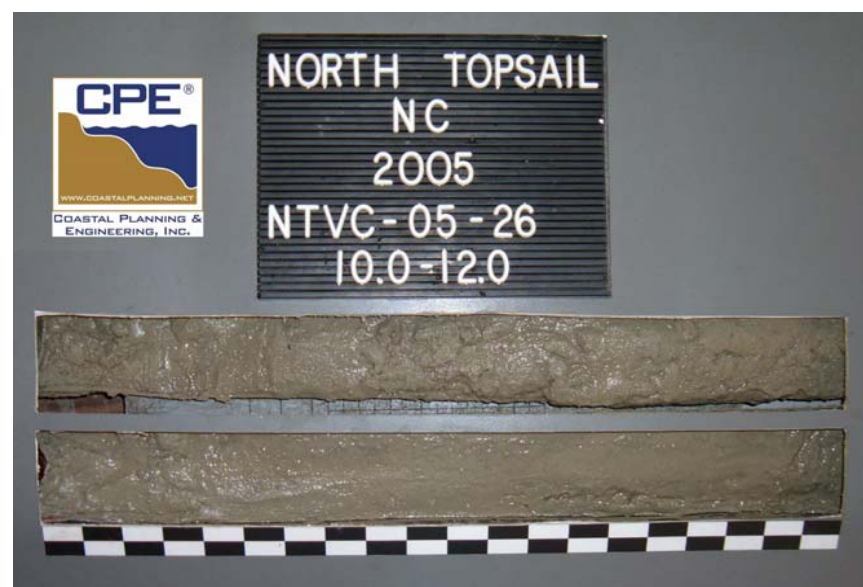
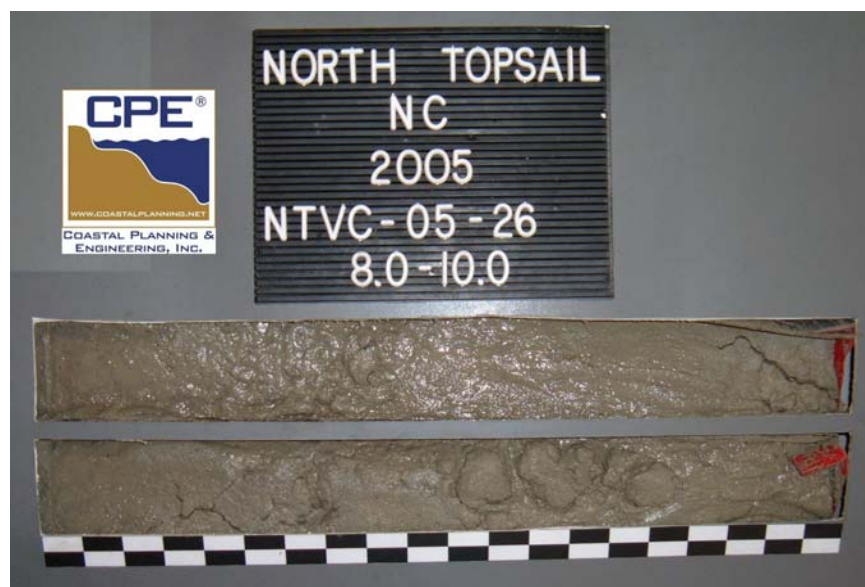




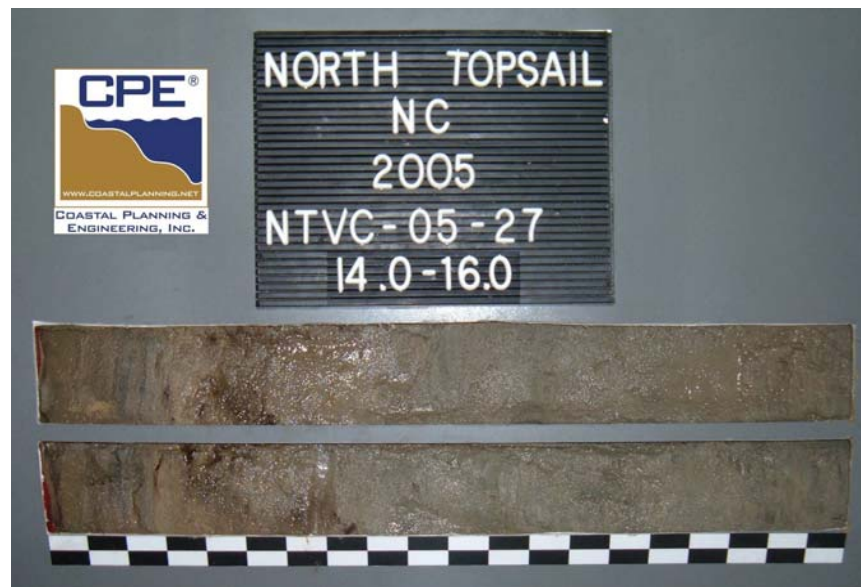
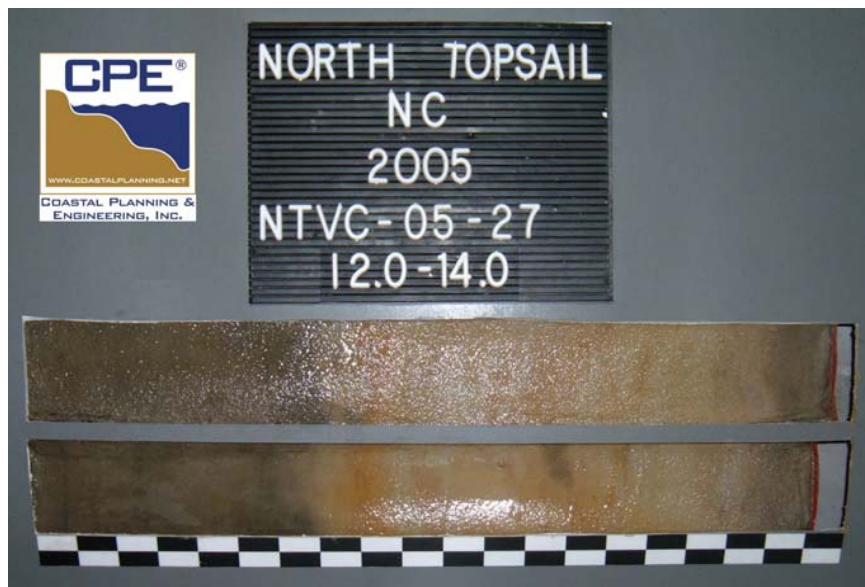
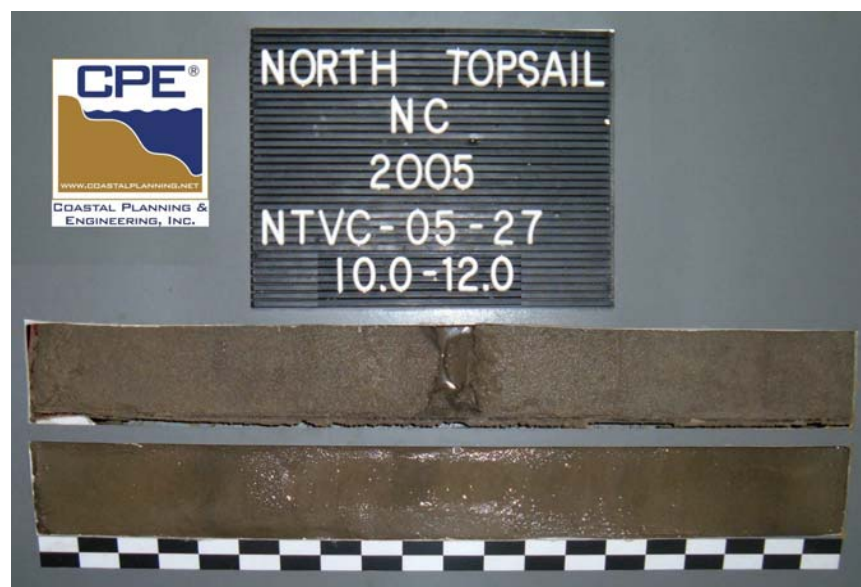
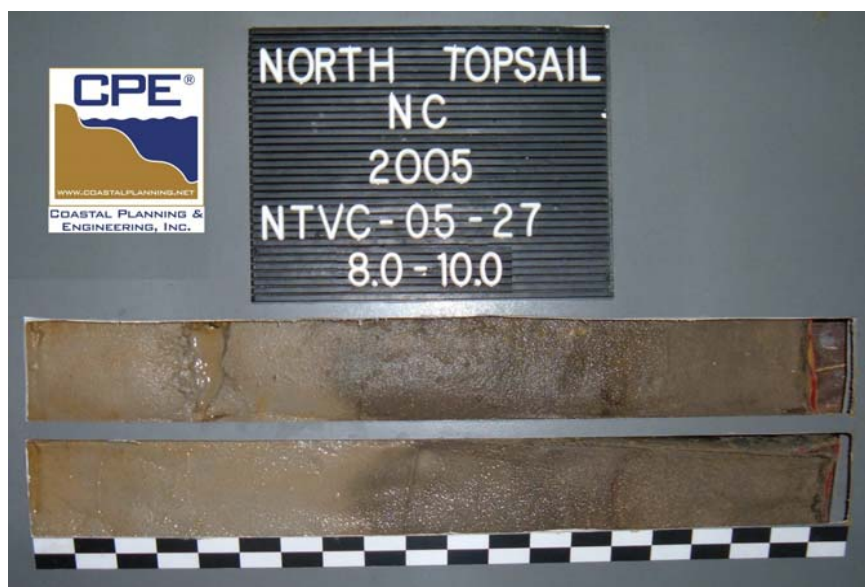








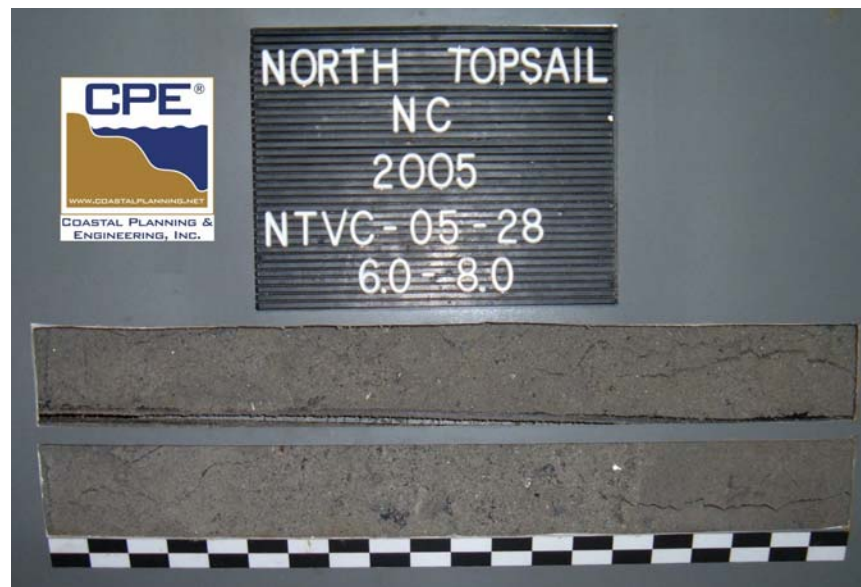
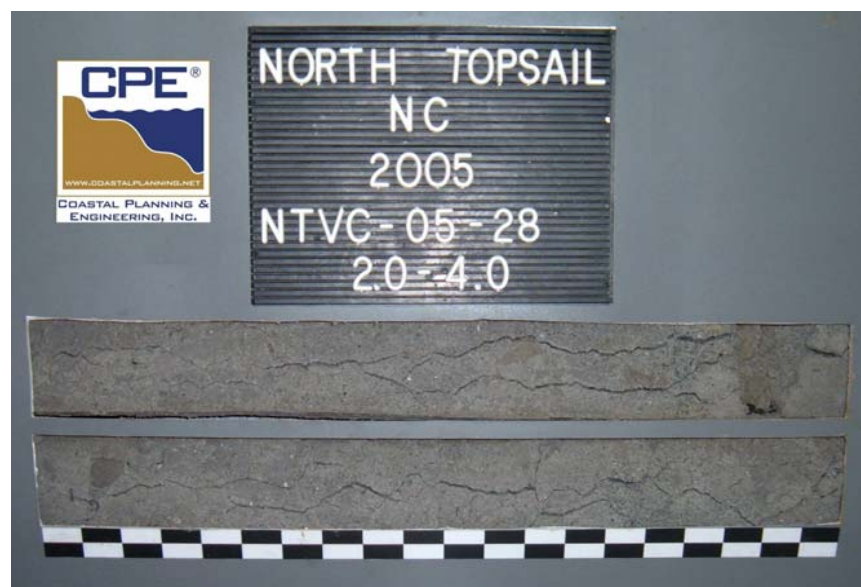


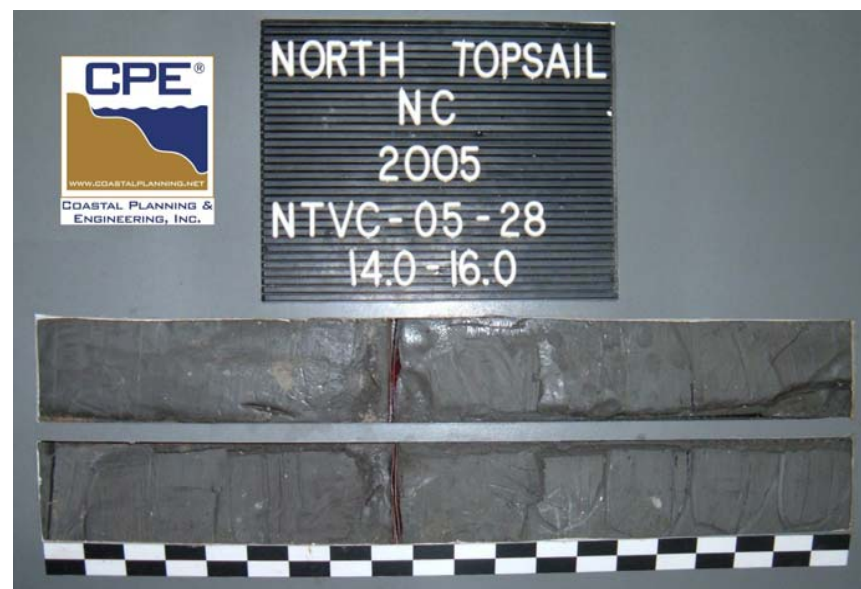
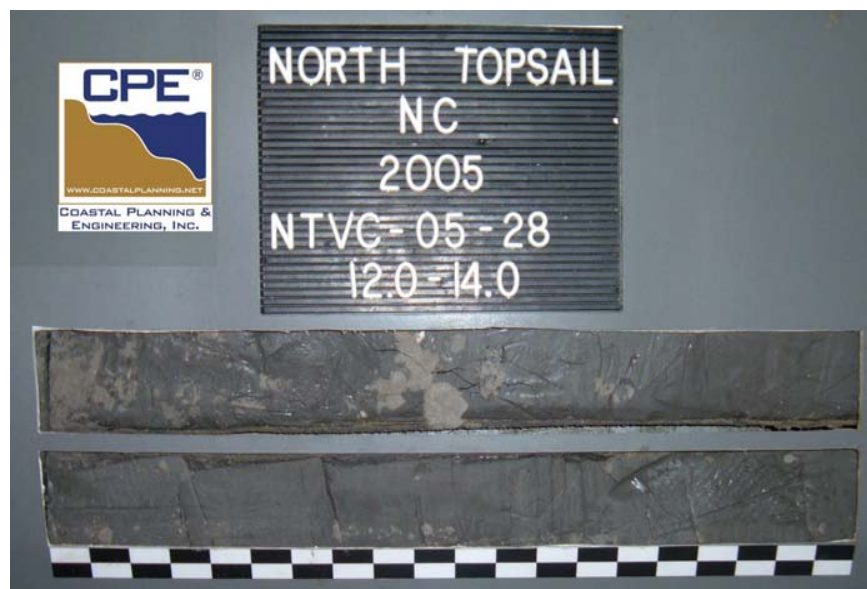
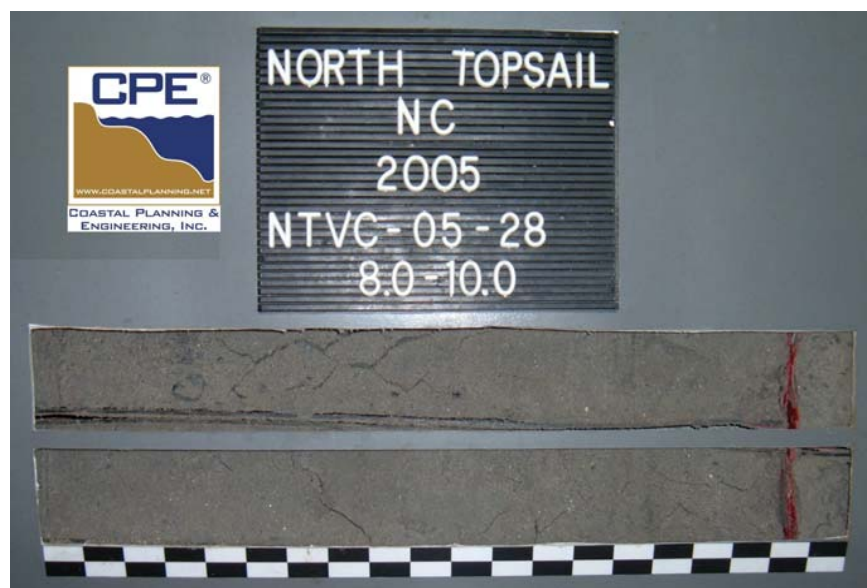


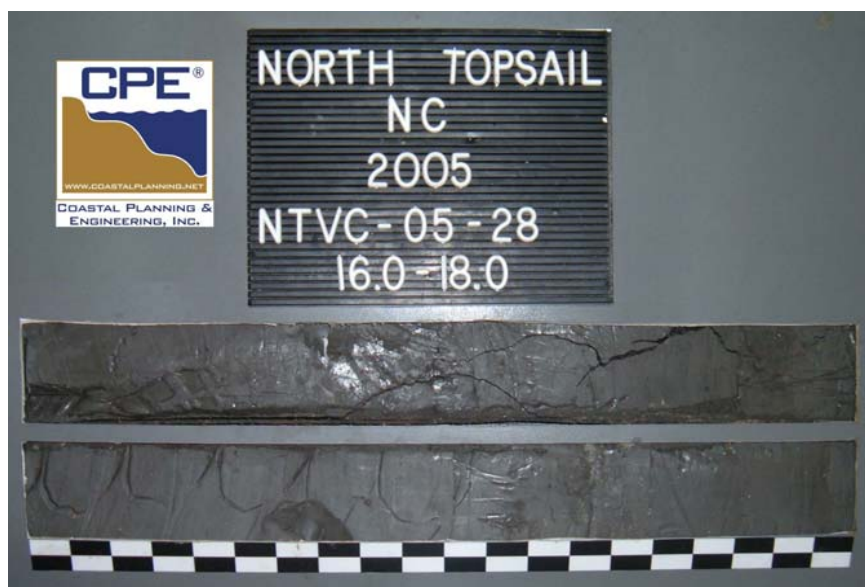


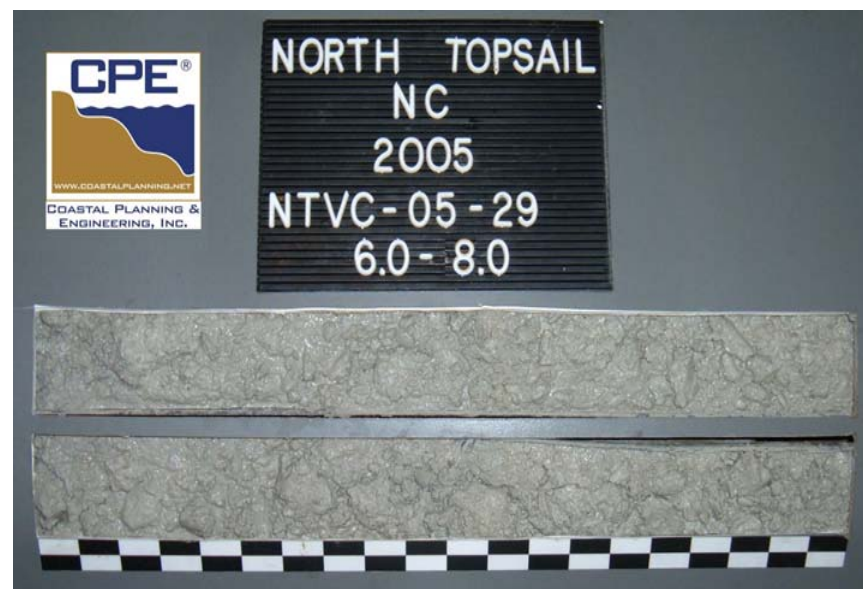
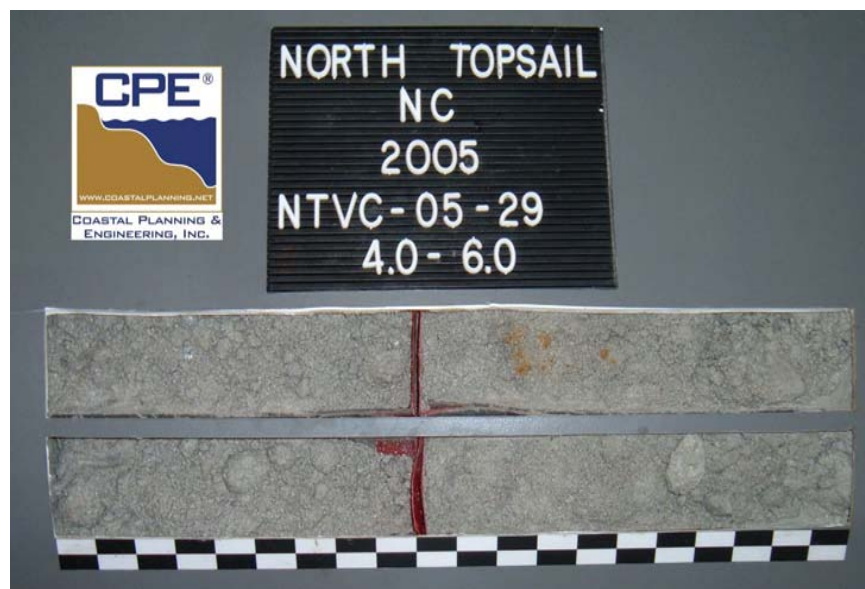
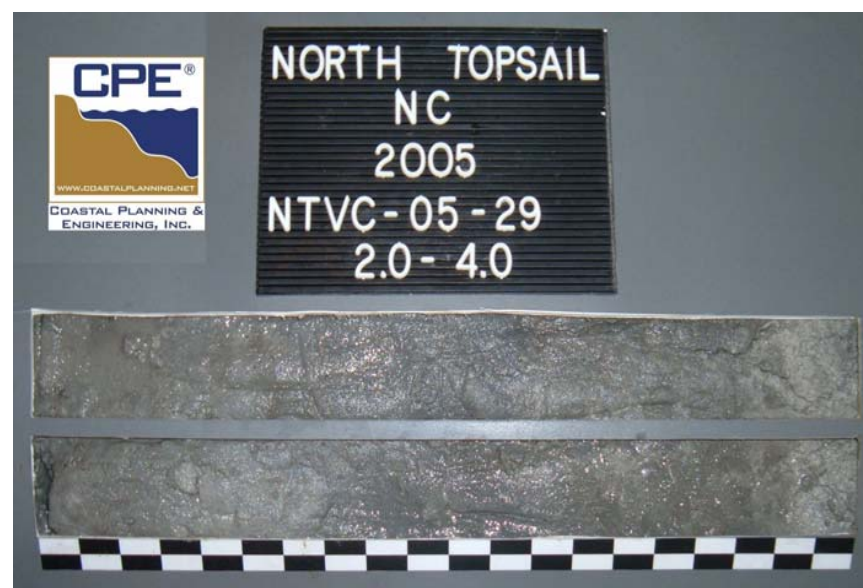
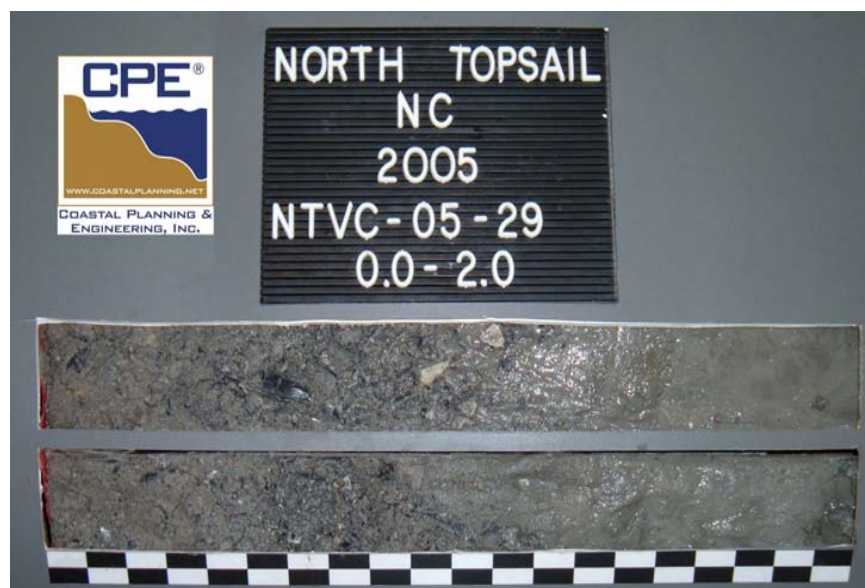
NORTH TOPSAIL
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NTVC-05-27
16.0-16.7

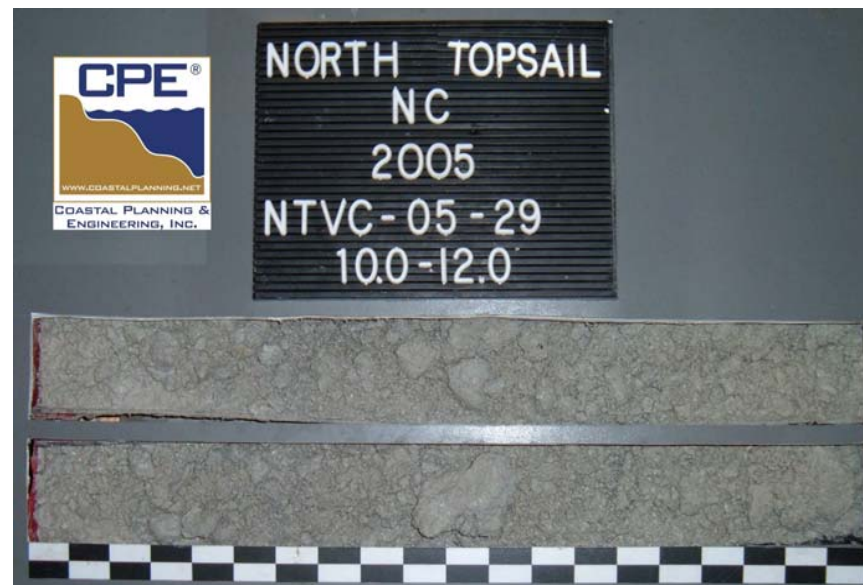


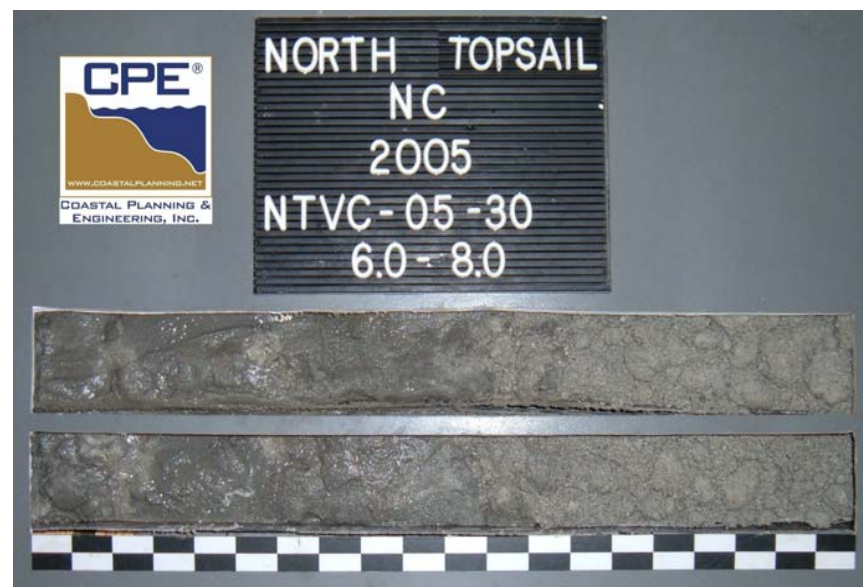
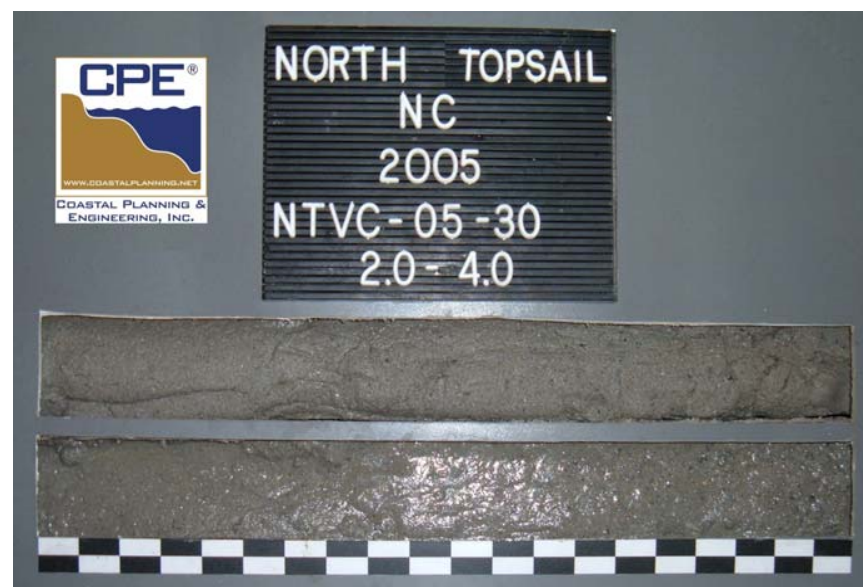
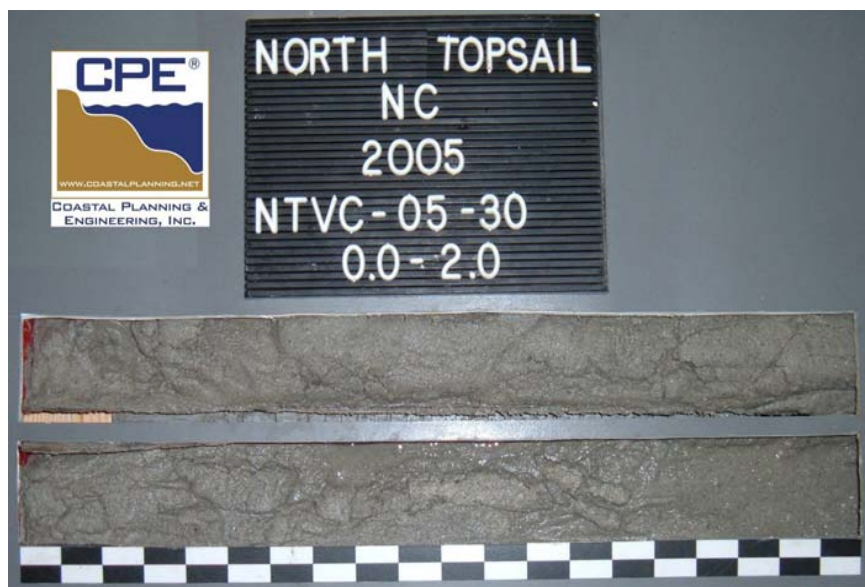


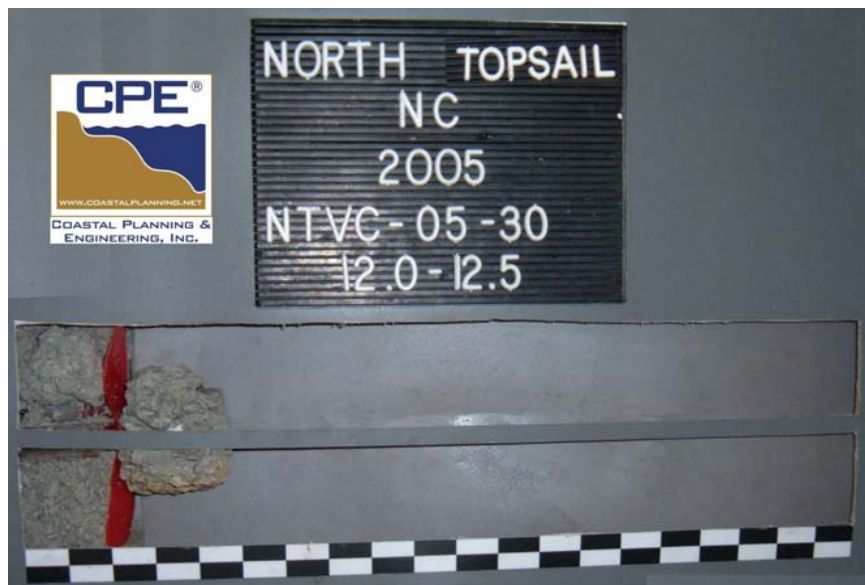
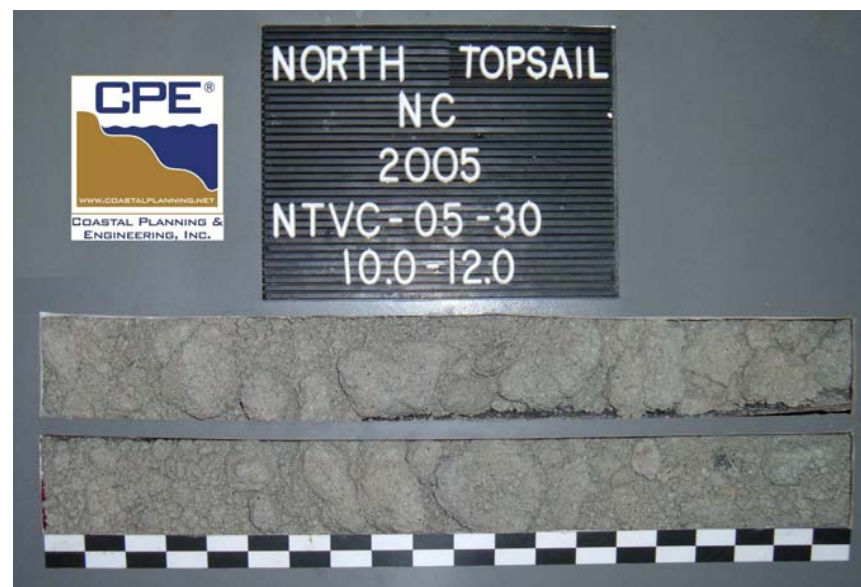
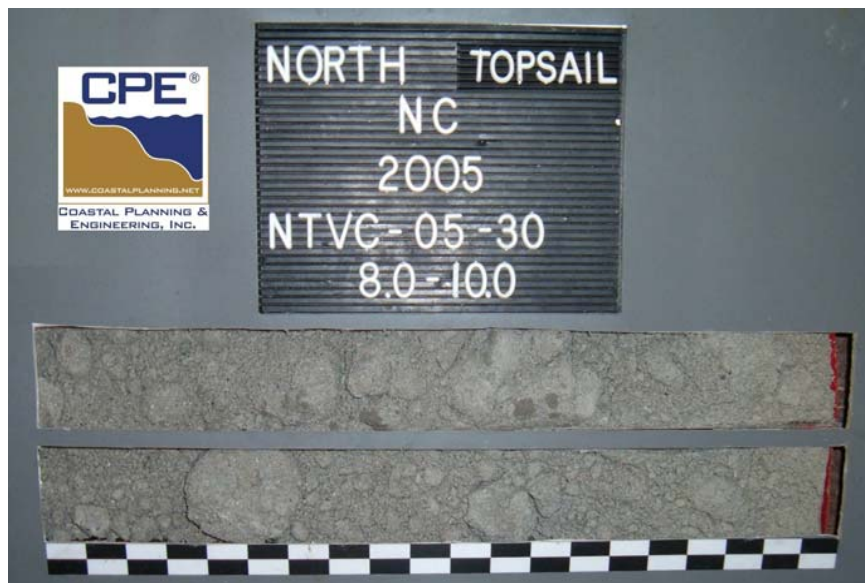












APPENDIX 25

2006 CPE VIBRACORE LOGS OFFSHORE BORROW AREA



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Phone # 1-561-391-8102*

Legend for Geotechnical Data

(SP), (SM), etc. Refers to the Army Corps of Engineers Unified Soils Classification System. Class types are defined primarily by grain size, sorting and percent of material passing the 200 sieve. Classification of materials on the core logs is initially based on visual field examinations and are identified on the core logs under the Classification of Materials Description. Final classifications are based on laboratory sieve analyses and are identified on the core logs in the Legend and under Remarks.

Silty, shelly, etc. The indicated sediment type is present. The estimated percentage indicated by the Unified Soil Classification System descriptive terms selected to describe the sediment.

Definition of descriptive terms		Grain size terms
Clean	Free of silt or clay	Cobbles – above 3"
Very	To a high degree	Gravel – 3" sieve to # 4 sieve
Slightly	To a small degree	Coarse – 3" sieve to ¾" sieve
Isolated	Limited occurrence	Fine – ¾" sieve to # 4 sieve
Occasional	Infrequently present	Sand – # 4 sieve to # 200 sieve
Tight	Dense compacted	Coarse - # 4 sieve to # 10 sieve
		Medium - # 10 sieve to # 40 sieve
		Fine - # 40 sieve to # 200 sieve
		Fine – (silt or clay) < # 200 sieve

Proportional definition of descriptive terms

<u>Descriptive Term</u>	<u>Range of Proportions</u>
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %
Coarse to fine	All sizes
Coarse to medium	10 % fine
Medium to fine	10 % coarse
Coarse	10 % medium and fine
Medium	10 % coarse and fine
Fine	10 % coarse and medium

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design Geotechnical Manual for Surface and Subsurface Investigations*



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Legend for Geotechnical Data

GW		Well graded gravels or gravel-sand mixtures, little or no fines	ML		Inorganic silts and very fine sands, rock flour, sandy silts or clayey silts with slight plasticity
GP		Poorly graded gravels or gravel-sand mixtures, w/ little or no fines	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soil, elastic silts
GM		Silty gravels, gravel-sand-silt mixtures	OL		Organic silts and organic silt-clays of low plasticity
GC		Clayey gravels, gravel-sand-clay mixtures	OH		Organic clays of medium to high plasticity, organic silts
SW		Well graded sands or gravelly sands, little or no fines	CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
SP		Poorly graded sands or gravelly sands, little or no fines	CH		Inorganic clays of high plasticity, fat clays
SM		Silty sands, sand-silt mixtures	PT		Peat and other highly organic soils
SC		Clayey sands, sand-clay mixtures	SP-SM		Poorly-graded silty sand
SW-SM		Well-graded silty sand	SM-SC		Silty clayey sand
GW-GM		Well-graded silty gravel	ML-CL		Inorganic silty lean clay
GM-GC		Clayey silty gravel			

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design Geotechnical Manual for Surface and Subsurface Investigations*



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Legend for Geotechnical Data

The naming convention used by Coastal Planning and Engineering incorporates key information about the item in the title. The naming format uses the following information:

- Abbreviated area name (two letters that will be used throughout the project)
- Abbreviated data type: vibracore (VC)
- Collection year (yy)
- Identification number
- Sample identification in the case of vibracores
- Composite samples are indicated by COMP following the identification number. COMP represents a composite developed to characterize beach compatible material.

Format examples:

- A) NTVC-05-05
- B) NTVC-05-08 S#2
- C) NTVC-05-22 COMP

Example A is a vibracore number 5, collected in the North Topsail area in the year 2005.

Example B refers to sample number 2 taken from vibracore number 8, which was collected in the North Topsail area in 2005.

Example C illustrates a composite developed to characterize beach compatible material in vibracore 22, collected in North Topsail in 2005. This material is intended for use in beach construction.

No specific format is followed for area name abbreviations; however, the name of the area is always given in the appendix title page where the data is presented.

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-01			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-20-06 08:55	
8. TOTAL DEPTH OF BORING 20.1 Ft.			16. ELEVATION TOP OF BORING -33.5 Ft.	
			17. TOTAL RECOVERY FOR BORING 20.1 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-33.5	0.0					
-34.4	0.9		SAND, medium grained, quartz, trace silt, gray (5Y-5/1), (SW).		1	Sample #1, Depth = 0.5' Mean (mm): 0.31, Phi Sorting: 1.47 Shell Hash: 0%, Fines (230): 2.35% (SW)
			SAND, fine grained, little silt, dark gray (10YR-4/1), (SM).		2	Sample #2, Depth = 3.0' Mean (mm): 0.16, Phi Sorting: 0.40 Shell Hash: 0%, Fines (230): 12.39% (SM)
-38.5	5.0		Gravelly SAND, fine to coarse grained, little silt, (1.0"x2.0") rock fragment @ 5.1, (1.0"x1.0") rock fragments @ 5.9' and 6.0', gray (5Y-5/1), (GM).		3	Sample #3, Depth = 5.4' Mean (mm): 2.36, Phi Sorting: 2.59 Shell Hash: 0%, Fines (230): 11.92% (SM)
-39.5	6.0				4	Sample #4, Depth = 8.0' Mean (mm): 0.11, Phi Sorting: 0.54 Shell Hash: 0%, Fines (230): 20.24% (SM)
			SAND, fine grained, some silt, (1.0"x1.0") organic pockets @ 12.8', 13.1', and 13.3', dark gray (10YR-4/1), (SM).		5	Sample #5, Depth = 13.0' Mean (mm): 0.13, Phi Sorting: 0.73 Shell Hash: 0%, Fines (230): 23.63% (SM)
-50.2	16.7				6	Sample #6, Depth = 17.4' Mean (mm): 1.08, Phi Sorting: 3.10 Shell Hash: 0%, Fines (230): 14.04% (SM)
-51.3	17.8		SAND, some gravel, little clay, little silt, gravel from fine grained to (3.0"x2.0"), gray (5Y-5/1), (SM).			
-52.3	18.8		Silty SAND, some gravel, gravel from fine grained to (3.0"x2.0"), gray (5Y-6/1), (SM).			
-53.6	20.1		SAND, fine grained, quartz, some silt, gray (5Y-5/1), (SM).			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006 GPJ FL DEP ROSS GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-02			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-20-06 09:46	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -35.3 Ft.	
			17. TOTAL RECOVERY FOR BORING 19.8 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.3	0.0					
			SAND, fine grained, little silt, trace shell fragments, (1.5"x1.5") shell fragment @ 1.5', dark greenish gray (10Y-4/1), (SP-SM).		1	Sample #1, Depth = 3.0' Mean (mm): 0.16, Phi Sorting: 0.38 Shell Hash: 0%, Fines (230): 9.13% (SP-SM)
					2	Sample #2, Depth = 6.0' Mean (mm): 0.15, Phi Sorting: 0.36 Shell Hash: 0%, Fines (230): 11.64% (SP-SM)
-44.7	9.4				3	Sample #3, Depth = 9.7' Mean (mm): 0.14, Phi Sorting: 0.65 Shell Hash: 1%, Fines (230): 20.48% (SM)
-45.5	10.2		SAND, fine grained, some silt, trace clay, dark gray (5Y-4/1), (SM).		4	Sample #4, Depth = 10.5' Mean (mm): 2.99, Phi Sorting: 2.97 Shell Hash: 0%, Fines (230): 15.18% (GM)
-46.1	10.8		GRAVEL, little silt, gravel up to (2.0"x2.0"), gray (5Y-6/1), (GM).		5	Sample #5, Depth = 11.3' Mean (mm): 0.17, Phi Sorting: 1.34 Shell Hash: 0%, Fines (230): 31.87% (SM)
-47.2	11.9		SAND, fine grained, some silt, trace clay, trace shell fragments, shell fragments < 0.5", dark gray (5Y-4/1), (SM).			
			SAND, fine grained, some silt, trace clay, dark gray (5Y-4/1), (SM).		6	Sample #6, Depth = 16.0' Mean (mm): 0.13, Phi Sorting: 0.71 Shell Hash: 0%, Fines (230): 23.25% (SM)
-55.1	19.8					
-55.3	20.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-03			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-20-06 10:43	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -34.4 Ft.	
			17. TOTAL RECOVERY FOR BORING 19.9 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.4	0.0					
-34.7	0.3		SAND, medium grained, little shell hash, trace silt, gray (5Y-5/1), (SW).		1	Sample #1, Depth = 0.1'
-35.1	0.7		SAND, fine grained, little silt, trace shell hash, dark olive gray (5Y-3/2), (SW-SM).		2	Mean (mm): 0.46, Phi Sorting: 1.63
-36.1	1.7		SAND, fine to medium grained, little shell fragments, little shell hash, trace rock fragments, trace silt, shell fragments up to (3.0"x2.0"); (3.0"x2.0") rock fragment @ 1.2', olive gray (5Y-4/2), (GW).		3	Shell Hash: 8%, Fines (230): 4.25% (SW)
					4	Sample #2, Depth = 0.5'
						Mean (mm): 0.27, Phi Sorting: 1.80
						Shell Hash: 3%, Fines (230): 9.79% (SW-SM)
						Sample #3, Depth = 1.1'
						Mean (mm): 2.64, Phi Sorting: 2.97
						Shell Hash: 8%, Fines (230): 4.05% (GW)
						Sample #4, Depth = 3.0'
						Mean (mm): 0.19, Phi Sorting: 0.45
						Shell Hash: 0%, Fines (230): 3.98% (SP)
			SAND, fine grained, trace silt, dark gray (5Y-4/1), (SP).		5	Sample #5, Depth = 8.0'
						Mean (mm): 0.18, Phi Sorting: 0.33
						Shell Hash: 0%, Fines (230): 2.65% (SP)
-45.0	10.6				6	Sample #6, Depth = 12.0'
			SAND, fine grained, trace silt, gray (5Y-5/1), (SP-SM).			Mean (mm): 0.17, Phi Sorting: 0.37
						Shell Hash: 0%, Fines (230): 7.39% (SP-SM)
-50.3	15.9				7	Sample #7, Depth = 19.0'
			SAND, fine grained, little silt, trace rock fragments, trace shell hash, (2.0"x2.0") rock fragments @ 17.0' and 17.5', dark gray (5Y-4/1), (SM).			Mean (mm): 0.12, Phi Sorting: 0.60
-54.3	19.9					Shell Hash: 0%, Fines (230): 19.56% (SM)
-54.4	20.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-04			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-20-06 11:51	
8. TOTAL DEPTH OF BORING 20.2 Ft.			16. ELEVATION TOP OF BORING -38.0 Ft.	
			17. TOTAL RECOVERY FOR BORING 20.2 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-38.0	0.0					
-38.9	0.9		SAND, fine grained, little silt, trace shell hash, (2.0"x5.0") organic pocket @ 0.1'; (1.0"x1.0") organic pocket @ 0.7', dark gray (5Y-4/1), (SM).		1	Sample #1, Depth = 0.3' Mean (mm): 0.21, Phi Sorting: 1.31 Shell Hash: 0%, Fines (230): 16.18% (SM)
-42.9	4.9		SAND, fine grained, little silt, trace rock fragments, trace shell hash, (3.0"x4.0") rock fragment @ 1.2'; (1.0"x1.0") rock fragments @ 2.2', 3.5', 4.6', and 4.7'; (0.5"x0.5") rock fragment @ 4.7', olive gray (5Y-5/2), (SM).		2	Sample #2, Depth = 3.0' Mean (mm): 0.33, Phi Sorting: 2.00 Shell Hash: 0%, Fines (230): 12.56% (SM)
-52.2	14.2		SAND, fine grained, quartz, trace shell hash, trace silt, dark gray (5Y-4/1), (SP-SM).		3	Sample #3, Depth = 7.0' Mean (mm): 0.19, Phi Sorting: 0.56 Shell Hash: 0%, Fines (230): 5.52% (SP-SM)
-57.5	19.5		SAND, fine grained, quartz, little silt, trace shell hash, olive gray (5Y-4/2), (SM).		4	Sample #4, Depth = 12.0' Mean (mm): 0.16, Phi Sorting: 0.51 Shell Hash: 0%, Fines (230): 7.12% (SP-SM)
-58.2	20.2		SAND, fine grained, little silt, dark gray (5Y-4/1), (SM).		5	Sample #5, Depth = 16.0' Mean (mm): 0.17, Phi Sorting: 0.59 Shell Hash: 0%, Fines (230): 12.58% (SM)
			End of Boring		6	Sample #6, Depth = 19.8' Mean (mm): 0.17, Phi Sorting: 0.89 Shell Hash: 1%, Fines (230): 16.61% (SM)

FLORIDA DEP ROSS NORTH TOPSAIL 2006 GPJ FL DEP ROSS GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-05			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING	
8. TOTAL DEPTH OF BORING 20.2 Ft.			16. ELEVATION TOP OF BORING -38.7 Ft.	
			17. TOTAL RECOVERY FOR BORING 20.2 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-38.7	0.0					
-40.3	1.6		SAND, fine grained, little silt, trace shell hash, fining downward, gray (5Y-5/1), (SM).		1	Sample #1, Depth = 0.6' Mean (mm): 0.19, Phi Sorting: 0.80 Shell Hash: 0%, Fines (230): 15.11% (SM)
-42.9	4.2		SAND, fine grained, little silt, trace rock fragments, trace shell hash, rock fragments up to (0.75"x0.75"), gray (5Y-5/1), (SM).		2	Sample #2, Depth = 3.2' Mean (mm): 0.24, Phi Sorting: 1.69 Shell Hash: 4%, Fines (230): 14.55% (SM)
-48.7	10.0		SAND, fine grained, trace shell hash, trace silt, dark gray (5Y-4/1), (SP-SM).		3	Sample #3, Depth = 8.0' Mean (mm): 0.16, Phi Sorting: 0.43 Shell Hash: 0%, Fines (230): 5.60% (SP-SM)
-55.7	17.0		SAND, fine grained, little silt, trace shell hash, dark gray (5Y-4/1), (SM).		4	Sample #4, Depth = 12.0' Mean (mm): 0.15, Phi Sorting: 0.42 Shell Hash: 0%, Fines (230): 17.12% (SM)
-57.6	18.9		SAND, fine to medium grained, some rock fragments, some silt, trace shell hash, (2.0"x1.5") rock fragment @ 17.4', dark gray (5Y-4/1), (SM).		5	Sample #5, Depth = 17.5' Mean (mm): 0.45, Phi Sorting: 2.25 Shell Hash: 0%, Fines (230): 23.12% (SM)
-58.9	20.2		SAND, fine grained, some silt, trace rock fragments, trace shell hash, (1.0"x2.0") rock fragment @ 19.7', olive gray (5Y-4/2), (SM).		6	Sample #6, Depth = 19.4' Mean (mm): 0.15, Phi Sorting: 1.23 Shell Hash: 0%, Fines (230): 27.49% (SM)
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-06			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -35.7 Ft.	
			17. TOTAL RECOVERY FOR BORING 20 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.7	0.0					
-39.3	3.6		SAND, fine grained, trace shell hash, trace silt, gray (5Y-6/1), (SP-SM).		1	Sample #1, Depth = 1.4' Mean (mm): 0.19, Phi Sorting: 0.45 Shell Hash: 0%, Fines (230): 5.72% (SP-SM)
-42.1	6.4		SAND, fine grained, trace shell hash, trace silt, gray (5Y-5/1), (SW-SM).		2	Sample #2, Depth = 4.5' Mean (mm): 0.22, Phi Sorting: 1.00 Shell Hash: 0%, Fines (230): 5.66% (SW-SM)
-47.7	12.0		SAND, fine grained, little rock fragments, trace shell hash, trace silt, rock fragments < 0.5", gray (5Y-5/1), (SP-SM).		3	Sample #3, Depth = 8.0' Mean (mm): 0.16, Phi Sorting: 0.47 Shell Hash: 0%, Fines (230): 9.36% (SP-SM)
-52.6	16.9		SAND, fine grained, some silt, little rock fragments, trace shell hash, rock fragments < 0.5", gray (5Y-5/1), (SM).		4	Sample #4, Depth = 15.0' Mean (mm): 0.19, Phi Sorting: 1.38 Shell Hash: 4%, Fines (230): 20.85% (SM)
-55.7	20.0		SAND, fine grained, little rock fragments, little shell hash, little silt, rock fragments up to (2.5"x2.5"), dark gray (5Y-4/1), (SM).		5	Sample #5, Depth = 19.0' Mean (mm): 0.12, Phi Sorting: 0.66 Shell Hash: 0%, Fines (230): 18.38% (SM)
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL North Carolina State Plane NAD 1983 NAVD 88	
2. BORING DESIGNATION NTV-06-07		LOCATION COORDINATES X = 2,474,257 Y = 268,303		
3. DRILLING AGENCY		CONTRACTOR FILE NO.		
4. NAME OF DRILLER Fred Kaub			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL BEARING		
6. THICKNESS OF OVERBURDEN 0.0 Ft.		12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD)		
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		13. TOTAL NUMBER CORE BOXES		
8. TOTAL DEPTH OF BORING 20.0 Ft.		14. ELEVATION GROUND WATER		
		15. DATE BORING STARTED COMPLETED 07-20-06 14:39 07-20-06 14:46		
		16. ELEVATION TOP OF BORING -35.1 Ft.		
		17. TOTAL RECOVERY FOR BORING 19.9 Ft.		
		18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.1	0.0					
-36.6	1.5		SAND, fine grained, little rock fragments, trace shell hash, trace silt, rock fragments up to (2.5"x2.5"), dark gray (5Y-4/1), (SW-SM).		1	Sample #1, Depth = 1.0' Mean (mm): 0.51, Phi Sorting: 2.14 Shell Hash: 0%, Fines (230): 7.17% (SW-SM)
-37.6	2.5		SAND, fine grained, trace rock fragments, trace shell hash, trace silt, rock fragments up to (1.0"x0.5"), gray (5Y-5/1), (SP-SM).		2	Sample #2, Depth = 2.0' Mean (mm): 0.22, Phi Sorting: 0.64 Shell Hash: 0%, Fines (230): 7.25% (SP-SM)
-38.1	3.0		SAND, fine grained, trace rock fragments, trace shell hash, trace silt, rock fragments up to (1.0"x1.0"), gray (5Y-5/1), (SP-SM).		3	Sample #3, Depth = 2.7' Mean (mm): 0.21, Phi Sorting: 0.55 Shell Hash: 0%, Fines (230): 9.56% (SP-SM)
			SAND, fine grained, trace shell hash, trace silt, olive gray (5Y-4/2), (SP-SM).		4	Sample #4, Depth = 7.0' Mean (mm): 0.17, Phi Sorting: 0.54 Shell Hash: 0%, Fines (230): 9.50% (SP-SM)
-45.7	10.6		SAND, fine grained, some rock fragments, little silt, rock fragments up to (1.0"x1.0"), gray (5Y-6/1), (SM).		5	Sample #5, Depth = 11.0' Mean (mm): 0.22, Phi Sorting: 1.25 Shell Hash: 0%, Fines (230): 19.64% (SM)
-46.8	11.7		SAND, fine grained, some rock fragments, little silt, trace shell hash, rock fragments up to (2.0"x2.0"), gray (5Y-6/1), (SW-SM).		6	Sample #6, Depth = 13.0' Mean (mm): 1.62, Phi Sorting: 2.39 Shell Hash: 1%, Fines (230): 10.75% (SW-SM)
-49.5	14.4		SAND, fine grained, little silt, trace rock fragments, trace shell hash, rock fragments up to (0.5"x0.5"), dark gray (5Y-4/1), (SM).		7	Sample #7, Depth = 16.0' Mean (mm): 0.16, Phi Sorting: 0.86 Shell Hash: 1%, Fines (230): 14.52% (SM)
-52.6	17.5		SAND, fine grained, some rock fragments, little silt, rock fragments up to (3.0"x2.0"), dark gray (5Y-4/1), (SW).			
-55.0	19.9		No Recovery.			
-55.1	20.0		End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006 GPJ FL DEP ROSS GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTVC-06-08			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
LOCATION COORDINATES X = 2,472,987 Y = 268,736			HORIZONTAL NAD 1983 VERTICAL NAVD 88	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
CONTRACTOR FILE NO.			12. TOTAL SAMPLES	
4. NAME OF DRILLER Fred Kaub			13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			14. ELEVATION GROUND WATER	
DEG. FROM VERTICAL			15. DATE BORING	
BEARING			STARTED 07-20-06 15:20 COMPLETED 07-20-06 15:28	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			16. ELEVATION TOP OF BORING -33.3 Ft.	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			17. TOTAL RECOVERY FOR BORING 13.5 Ft.	
8. TOTAL DEPTH OF BORING 13.5 Ft.			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-33.3	0.0						
-34.4	1.1		SAND, fine grained, little clay, little silt, trace shell hash, black (5Y-2.5/1), (SM-SC).		1	Sample #1, Depth = 0.6' Mean (mm): 0.26, Phi Sorting: 1.43 Shell Hash: 2%, Fines (230): 15.54% (SM-SC)	0
-36.1	2.8		SAND, fine grained, trace rock fragments, trace shell hash, trace silt, rock fragments up to (2.0"x2.0"), gray (5Y-5/1), (SW-SM).		2	Sample #2, Depth = 2.0' Mean (mm): 0.29, Phi Sorting: 1.33 Shell Hash: 0%, Fines (230): 7.94% (SW-SM)	
-41.8	8.5		SAND, fine grained, trace rock fragments, trace shell hash, trace silt, silt distributed in intermittent lamina, gray (5Y-5/1), (SP-SM).		3	Sample #3, Depth = 6.0' Mean (mm): 0.19, Phi Sorting: 0.48 Shell Hash: 0%, Fines (230): 7.64% (SP-SM)	5
-46.8	13.5		SAND, fine grained, little silt, trace rock fragments, trace shell hash, (3.0"x3.0") rock fragment @ 13.3'; silt distributed in intermittent lamina, gray (5Y-5/1), (SM).		4	Sample #4, Depth = 11.0' Mean (mm): 0.21, Phi Sorting: 0.58 Shell Hash: 1%, Fines (230): 15.68% (SM)	10
			End of Boring				15
							20
							25

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-09			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING	
8. TOTAL DEPTH OF BORING 20.2 Ft.			16. ELEVATION TOP OF BORING -32.8 Ft.	
			17. TOTAL RECOVERY FOR BORING 20.2 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-32.8	0.0					
-33.3	0.5		SAND, fine to medium grained, little organics, little shell hash, trace silt, (2.0"x2.0") rock fragment @ 0.2'; (2.0"x3.0") rock fragment @ 0.4'; black (5Y-2.5/1), (SW-SM).		1	Sample #1, Depth = 0.3' Mean (mm): 0.57, Phi Sorting: 2.09 Shell Hash: 12%, Fines (230): 6.08% (SW-SM)
			SAND, fine grained, trace shell hash, trace silt, gray (5Y-5/1), (SP-SM).		2	Sample #2, Depth = 3.0' Mean (mm): 0.22, Phi Sorting: 0.65 Shell Hash: 0%, Fines (230): 7.95% (SP-SM)
-38.1	5.3					
-38.9	6.1		SAND, fine grained, trace shell hash, trace silt, (1.0"x2.0") partially lithified sand ball @ 5.5', (1.0"x1.0") partially lithified sand ball @ 5.6' and 5.7'; (2.0"x2.0") partially lithified sand ball @ 5.9', gray (5Y-5/1), (SP-SM).		3	Sample #3, Depth = 5.5' Mean (mm): 0.23, Phi Sorting: 0.70 Shell Hash: 0%, Fines (230): 9.70% (SP-SM)
					4	Sample #4, Depth = 11.0' Mean (mm): 0.19, Phi Sorting: 0.34 Shell Hash: 0%, Fines (230): 7.44% (SP-SM)
					5	Sample #5, Depth = 17.0' Mean (mm): 0.17, Phi Sorting: 0.35 Shell Hash: 0%, Fines (230): 5.63% (SP-SM)
-53.0	20.2					
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-10			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -34.7 Ft.	
			17. TOTAL RECOVERY FOR BORING 19.4 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.7	0.0					
-36.0	1.3		SAND, fine to medium grained, some shell hash, little shell fragments, trace silt, shell fragments up to (1.0"x2.0"), black (5Y-2.5/1), (SW).		1	Sample #1, Depth = 0.6' Mean (mm): 0.62, Phi Sorting: 1.95 Shell Hash: 17%, Fines (230): 1.27% (SW)
-39.4	4.7		SAND, fine grained, trace rock fragments, trace shell hash, trace silt, trace partially lithified sand balls < 0.5"; (0.5"x0.5") rock fragment @ 3.4', gray (5Y-6/1), (SP-SM).		2	Sample #2, Depth = 3.0' Mean (mm): 0.21, Phi Sorting: 0.66 Shell Hash: 0%, Fines (230): 9.32% (SP-SM)
					3	Sample #3, Depth = 8.0' Mean (mm): 0.18, Phi Sorting: 0.43 Shell Hash: 0%, Fines (230): 7.14% (SP-SM)
					4	Sample #4, Depth = 16.0' Mean (mm): 0.18, Phi Sorting: 0.36 Shell Hash: 0%, Fines (230): 5.29% (SP-SM)
-54.1	19.4		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-6/1), (SP-SM).			
-54.7	20.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTVC-06-11			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 07-21-06 11:03	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -38.0 Ft.	
			17. TOTAL RECOVERY FOR BORING 19.8 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Beau Suthard	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-38.0	0.0					
-46.0	8.0		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP-SM).		1	Sample #1, Depth = 4.0' Mean (mm): 0.19, Phi Sorting: 0.51 Shell Hash: 0%, Fines (230): 7.62% (SP-SM)
-52.7	14.7		SAND, fine grained, quartz, little silt, trace shell hash, 0.25" rock fragment @ 13.3', gray (5Y-5/1), (SM).		2	Sample #2, Depth = 12.0' Mean (mm): 0.17, Phi Sorting: 0.61 Shell Hash: 0%, Fines (230): 14.95% (SM)
-57.8	19.8		SAND, fine grained, some silt, trace shell hash, olive gray (5Y-5/2), (SM).		3	Sample #3, Depth = 17.0' Mean (mm): 0.20, Phi Sorting: 0.99 Shell Hash: 1%, Fines (230): 24.15% (SM)
-58.0	20.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-12			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 09-28-06 11:39	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -37.3 Ft.	
			17. TOTAL RECOVERY FOR BORING 19.8 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Ken Wilson	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-37.3	0.0					
-37.6	0.3		SAND, medium grained, quartz, some shell hash, little silt, little echinoderm spines, gray (5Y-6/1), (SW-SM).		1	Sample #1, Depth = 0.2' Mean (mm): 0.34, Phi Sorting: 1.83 Shell Hash: 7%, Fines (230): 9.97% (SW-SM)
					2	Sample #2, Depth = 4.0' Mean (mm): 0.19, Phi Sorting: 0.48 Shell Hash: 0%, Fines (230): 8.53% (SP-SM)
			SAND, medium grained, quartz, trace shell fragments, trace shell hash, trace silt, (2.0"x2.0") rock fragments @ 1.4', 3.4', and 12.2', (2)1.0" rock fragments @12.2'; (2) 2.0" shell fragments @ 11.6', gray (5Y-6/1), (SP-SM).		3	Sample #3, Depth = 8.0' Mean (mm): 0.18, Phi Sorting: 0.49 Shell Hash: 0%, Fines (230): 6.59% (SP-SM)
					4	Sample #4, Depth = 11.0' Mean (mm): 0.18, Phi Sorting: 0.66 Shell Hash: 1%, Fines (230): 8.72% (SP-SM)
-50.3	13.0					
			Sandy GRAVEL, little shell hash, gravel up to 3.0", gray (5Y-6/1), (GW-GM).		5	Sample #5, Depth = 14.4' Mean (mm): 1.46, Phi Sorting: 2.26 Shell Hash: 5%, Fines (230): 7.59% (SW-SM)
-52.9	15.6					
			SAND, fine grained, quartz, little silt, trace shell hash, (10Y-5/4), (SM).		6	Sample #6, Depth = 18.0' Mean (mm): 0.17, Phi Sorting: 0.85 Shell Hash: 1%, Fines (230): 17.53% (SM)
-57.1	19.8					
-57.3	20.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006 GPJ FL DEP ROSS GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-13			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 09-28-06 12:24	
8. TOTAL DEPTH OF BORING 15.0 Ft.			16. ELEVATION TOP OF BORING -37.8 Ft.	
			17. TOTAL RECOVERY FOR BORING 14.6 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Ken Wilson	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-37.8	0.0					
-38.0	0.2		SAND, fine grained, quartz, trace shell hash, trace silt, light olive gray (5Y-6/2), (SW-SM).		1	Sample #1, Depth = 0.1'
-38.7	0.9		SAND, medium grained, little shell hash, trace shell fragments, trace silt, shell fragments up to 0.75", olive gray (5Y-4/2), (SW-SM).		2	Mean (mm): 0.21, Phi Sorting: 1.27 Shell Hash: 1%, Fines (230): 9.53% (SW-SM)
			SAND, fine grained, quartz, little silt, 1.0" rock fragment @ 1.4', very dark gray (5Y-3/1), (SM).		3	Sample #2, Depth = 0.7' Mean (mm): 0.72, Phi Sorting: 2.36 Shell Hash: 7%, Fines (230): 5.07% (SW-SM)
-43.6	5.8					Sample #3, Depth = 3.0' Mean (mm): 0.19, Phi Sorting: 1.06 Shell Hash: 1%, Fines (230): 11.82% (SM)
-44.6	6.8		Sandy GRAVEL, trace silt, gravel up to 3.0", gray (5Y-6/1), (GW-GM).		4	Sample #4, Depth = 6.0' Mean (mm): 1.43, Phi Sorting: 3.18 Shell Hash: 0%, Fines (230): 7.63% (SW-SM)
			SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP-SM).		5	Sample #5, Depth = 9.0' Mean (mm): 0.19, Phi Sorting: 0.42 Shell Hash: 0%, Fines (230): 4.81% (SP-SM)
-48.8	11.0					
			SAND, fine grained, quartz, little silt, trace shell hash, 0.2" pocket of 5Y-5/2 (olive gray) @ 14.0', gray (5Y-5/1), (SP-SM).		6	Sample #6, Depth = 13.0' Mean (mm): 0.19, Phi Sorting: 0.75 Shell Hash: 0%, Fines (230): 11.09% (SP-SM)
-52.4	14.6					
-52.8	15.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTVC-06-14			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
LOCATION COORDINATES X = 2,475,135 Y = 263,170			HORIZONTAL NAD 1983 VERTICAL NAVD 88	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
CONTRACTOR FILE NO.			12. TOTAL SAMPLES	
4. NAME OF DRILLER Fred Kaub			13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			14. ELEVATION GROUND WATER	
DEG. FROM VERTICAL			15. DATE BORING	
BEARING			STARTED 09-28-06 15:59 COMPLETED 09-28-06 16:07	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			16. ELEVATION TOP OF BORING -38.0 Ft.	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			17. TOTAL RECOVERY FOR BORING 15.1 Ft.	
8. TOTAL DEPTH OF BORING 19.0 Ft.			18. SIGNATURE AND TITLE OF INSPECTOR Ken Wilson	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-38.0	0.0					
-40.5	2.5		SAND, fine grained, quartz, little silt, trace rock fragments, trace shell hash, rock fragments up to 1.0", gray (5Y-5/1), (SP-SM).		1	Sample #1, Depth = 1.0' Mean (mm): 0.20, Phi Sorting: 0.72 Shell Hash: 0%, Fines (230): 10.37% (SP-SM)
-44.3	6.3		SAND, fine grained, quartz, trace rock fragments, trace shell hash, trace silt, rock fragments up to 1.0", gray (5Y-5/1), (SP-SM).		2	Sample #2, Depth = 4.0' Mean (mm): 0.20, Phi Sorting: 0.49 Shell Hash: 0%, Fines (230): 6.48% (SP-SM)
-46.5	8.5		SAND, fine grained, quartz, trace shell hash, trace silt, 1.0" silt pocket @ 6.4'; 0.6" silt pocket @ 8.0'; 1.0" rock fragment @ 8.5', greenish gray (10Y-5/1), (SP-SM).		3	Sample #3, Depth = 7.0' Mean (mm): 0.18, Phi Sorting: 0.68 Shell Hash: 1%, Fines (230): 6.69% (SP-SM)
-51.0	13.0		SAND, fine grained, quartz, little silt, trace shell hash, 0.6" silt pocket @ 9.0', greenish gray (10Y-5/1), (SP-SM).		4	Sample #4, Depth = 10.0' Mean (mm): 0.17, Phi Sorting: 0.61 Shell Hash: 0%, Fines (230): 10.22% (SP-SM)
-53.1	15.1		SAND, fine grained, quartz, some gravel, some silt, trace rock fragments, rock fragments up to 2.0", gravel up to 3.0", olive gray (5Y-5/2), (SM).		5	Sample #5, Depth = 13.0' Mean (mm): 0.20, Phi Sorting: 1.27 Shell Hash: 1%, Fines (230): 20.91% (SM)
-57.0	19.0		No Recovery.			
			End of Boring			

FLORIDA DEP ROSS NORTH_TOPSAIL_2006.GPJ FL DEP ROSS.GDT 10/25/06

DRILLING LOG		DIVISION	INSTALLATION	SHEET 1
1. PROJECT North Topsail 2006 Vibracores North Topsail, North Carolina			9. SIZE AND TYPE OF BIT 3.0 In.	
2. BORING DESIGNATION NTV-06-15			10. COORDINATE SYSTEM/DATUM North Carolina State Plane	
3. DRILLING AGENCY			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
4. NAME OF DRILLER Fred Kaub			12. TOTAL SAMPLES	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.			14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.			15. DATE BORING 09-28-06 16:51	
8. TOTAL DEPTH OF BORING 20.0 Ft.			16. ELEVATION TOP OF BORING -37.2 Ft.	
			17. TOTAL RECOVERY FOR BORING 20.5 Ft.	
			18. SIGNATURE AND TITLE OF INSPECTOR Ken Wilson	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-37.2	0.0					
-37.6	0.4		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SW).		1	Sample #1, Depth = 0.2'
-38.0	0.8				2	Mean (mm): 0.29, Phi Sorting: 1.23
-38.7	1.5		SAND, medium grained, quartz, some shell hash, trace shell fragments, trace silt, shell fragments up to 1.75", dark gray (5Y-4/1), (SW).		3	Shell Hash: 3%, Fines (230): 1.49% (SW)
			SAND, medium grained, quartz, some rock fragments, trace shell hash, trace silt, rock fragments up to (3.5"x2.0"), gray (5Y-5/1), (GW).		4	Sample #2, Depth = 0.6'
						Mean (mm): 0.81, Phi Sorting: 1.98
						Shell Hash: 21%, Fines (230): 1.83% (SW)
						Sample #3, Depth = 1.0'
						Mean (mm): 0.27, Phi Sorting: 1.19
						Shell Hash: 3%, Fines (230): 3.98% (SW)
						Sample #4, Depth = 3.0'
						Mean (mm): 0.45, Phi Sorting: 2.43
						Shell Hash: 13%, Fines (230): 8.96% (SW-SM)
-42.6	5.4		SAND, medium grained, quartz, trace rock fragments, trace shell hash, trace silt, (3.0"x2.0") rock fragment @ 8.0', 0.1" rock fragment @ 8.7', olive gray (5Y-5/2), (SW-SM).			
			SAND, fine grained, quartz, trace shell hash, trace silt, (3.0"x2.0") rock fragment @ 8.0'; 1.0" rock fragment @ 8.7', olive gray (5Y-5/2), (SP-SM).		5	Sample #5, Depth = 9.0'
						Mean (mm): 0.18, Phi Sorting: 0.61
						Shell Hash: 0%, Fines (230): 9.71% (SP-SM)
-48.2	11.0					
			SAND, fine grained, quartz, little silt, trace shell hash, olive gray (5Y-5/2), (SP-SM).		6	Sample #6, Depth = 12.0'
						Mean (mm): 0.17, Phi Sorting: 0.63
						Shell Hash: 0%, Fines (230): 10.17% (SP-SM)
-50.2	13.0					
			SAND, fine grained, quartz, little silt, trace shell hash, 0.5" partially lithified sand balls throughout, (1.0"x1.0") rock fragment @ 16.7', olive gray (5Y-5/2), (SM).		7	Sample #7, Depth = 15.0'
						Mean (mm): 0.27, Phi Sorting: 1.67
						Shell Hash: 1%, Fines (230): 18.52% (SM)
-56.2	19.0					
			SAND, medium grained, quartz, trace silt, Expansion from 20.0' to 20.5', olive gray (5Y-5/2), (SP).			
-57.7	20.5					
			End of Boring			

FLORIDA DEP ROSS NORTH TOPSAIL 2006.GPJ FL DEP ROSS.GDT 10/25/06